DECEMBER 12, 1953 PAGES 1219 TO 1272

THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2

Telegrams: LANCET, RAND, LONDON **Telephone:** TEMPLE BAR 7228 and 7229

No. XXIV OF VOL. II, 1953 LONDON, SATURDAY, DECEMBER 12, 1953 Pp. 120—Price 1s.
No. 6798 VOL. CCLXV Founded 1823 PUBLISHED WEEKLY Registered as a Newspaper Annual Subscription: £2 2s.

EVANS MEDICAL SUPPLIES LTD

announce that the

ORIGINAL NEW LONG-ACTING INSULIN ZINC SUSPENSIONS

NOVO LENTE INSULINS

are now available

EVANS MEDICAL SUPPLIES LTD. LIVERPOOL & LONDON

460

THE LIBRARY OF CONGRESS SERIAL RECORD JAN 11 1954 DUPL

CAREERS IN MEDICINE

Edited by P. O. WILLIAMS, M.A. (Cantab.), M.B., B.Chir., M.R.C.P.

With contributions from 49 eminent medical authorities

Cr. 8vo 292 pages Price 15s. net, plus 8d. postage

This book outlines the particular qualities of mind, the type and amount of specialised training, required in each branch of the Medical Profession.

". . . it should be in the hands of everyone who has to advise medical students, and certainly should be consulted by every newly-qualified doctor."—*The Practitioner.*

Hodder & Stoughton Ltd., 20, Warwick-square, London, E.C.4

Second Edition

SURGERY: A TEXTBOOK FOR STUDENTS

By CHARLES AUBREY PANNETT, B.Sc., M.D., F.R.C.S.

Professor of Surgery, University of London; Director of the Surgical Unit, St. Mary's Hospital, London; sometime member of the Court of Examiners, R.C.S. Eng., and Examiner to the Universities of London, Manchester, and Cardiff

769 + xiv Price 27s. 6d. net, plus 1s. postage

Extensively illustrated throughout text

The book has been completely revised to incorporate advances in surgery since the issue of the first edition. At the same time unnecessary matter has been avoided, so that the book remains a presentation of modern surgery of moderate size. The character of the book has been preserved but the additional matter makes it more generally useful to postgraduate as well as undergraduate students

Hodder & Stoughton Ltd., 20, Warwick-square, London, E.C.4

Fifth Edition

PRINCIPLES OF MEDICAL STATISTICS

By A. BRADFORD HILL, D.Sc., Ph.D.

Demy 8vo 282 + x 10s. 6d. net, plus 6d. postage

With Twenty-five Exercises and Answers

The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2

FANCONI & WALLGREN'S

TEXTBOOK OF PAEDIATRICS

English Edition edited by W. R. F. COLLIS, M.A., M.D., F.R.C.P., F.R.C.P.I., D.P.H.

Translated from the German by E. KAWERAU, M.B., M.Sc., A.R.I.C.

Eight-page, illustrated brochure available upon request.

1124 pages 440 illustrations 19 colour plates £7 7s. net

Wm. Heinemann Medical Books Ltd., Gt. Russell-street, W.C.1

DISABILITIES

AND HOW TO LIVE WITH THEM

by 55 Patients

Demy 8vo 252 pages Price 10s. 6d. net, plus 6d. postage

". . . it is because these essays remind us so vividly of suffering man that the book has an especial value for all doctors. . . .The book should become a classic."

—Review in *British Medical Journal.*

The Lancet Limited, 7, Adam-street, Adelphi, London, W.C.2

TECHNIQUES IN PHYSIOTHERAPY

Edited by

F. L. GREENHILL, S.R.N., M.C.S.P., T.H.T.

Sister-in-Charge, Medical Rehabilitation Unit, Royal Free Hospital; Late Sister-in-Charge, Rehabilitation Unit, Hill End E.M.S. Hospital (St. Bartholomew's); Former Member Council of Chartered Society of Physiotherapy.

Assisted by

C. B. HEALD, C.B.E., M.D., F.R.C.P., in Rheumatism and Arthritis.
J. N. BARRON, F.R.C.S., in Burns and Injuries of the Hand.
Mr. J. COLSON, M.C.S.P., M.A.O.T., Occupational Therapy in Medicine and Surgery.

Demy 8vo Pages 222 + x 8 plates 34 figures

12s. 6d. net, plus 7d. postage.

Hodder & Stoughton Ltd., 20, Warwick-square, London, E.C.4

Just Published

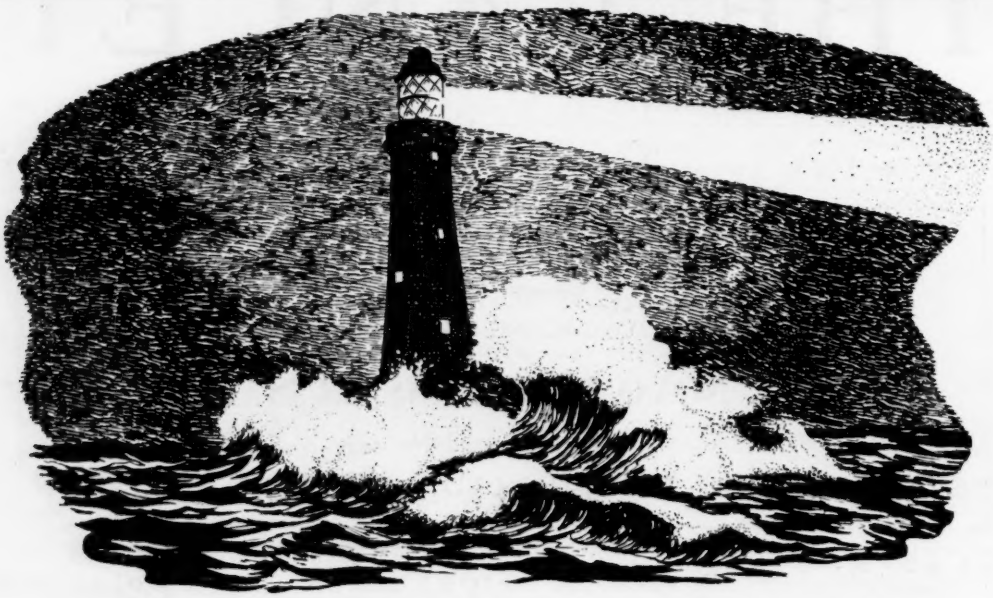
JOSEPH BARCROFT 1872–1947

KENNETH J. FRANKLIN

This biography re-creates the man and the scientist and to some extent the changing conditions of his time. It has been written partly with the object of recalling him to his wide circle of friends in numerous countries, partly to stimulate a younger generation by his great example, partly to reveal to laymen how a particular scientist evolved into a world figure.

Royal 8vo 399 Pages 61 Illustrations 37s. 6d. net

BLACKWELL SCIENTIFIC PUBLICATIONS · OXFORD



FOUNDED ON A ROCK

For centuries, the many lighthouses around our shores have warned of treacherous rocks and shoals and guided shipping into the right channels. Without these safeguarding sentries of the seas many valuable lives and craft would be lost each year in the dangerous waters which surround our island home.

Babies, like frail craft, need protection if they are to be safely steered through the sometimes dangerous waters of infancy into the safe haven of adult health and happiness.

Cow & Gate, like a lighthouse, is well and truly founded on a rock of scientific research and experience now extending over half a century. It still stands alone as the most reliable and safe substitute if natural feeding fails.

COW & GATE MILK FOODS

5056 GUILDFORD, SURREY.

DEC. 12, 1953 PAGES 1219 TO 1272

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, PATHOLOGY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS

No. 6798 LONDON: SATURDAY, DECEMBER 12, 1953 CCLXV

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT

ORIGINAL ARTICLES

The University and Surgery — Prof. M. F. A. WOODRUFF, F.R.C.S. ... 1219

The Suprapubic Catheter — C. G. SCORER, F.R.C.S. ... 1222

Icterus of the Brain in the Newborn — A. E. CLAIREAUX, M.R.C.P.E., P. G. COLE, A.I.M.L.T., G. H. LATHE, M.D. ... 1226

Yeasts in the Vaginal Flora — SYLVIA DAWKINS, M.B., JOAN EDWARDS, M.B., R. W. RIDDELL, F.R.C.P.E. ... 1230

Hydrocephalus Associated with Deficiency of Vitamin A — J. W. MILLEN, M.D., D. H. M. WOOLLAM, M.R.C.P., G. E. LAMMING, PH.D. ... 1234

Aureomycin-resistant Staphylococcal Enterocolitis — D. L. GARDNER, M.R.C.P.E. 1236

Amino-acid Composition of Eight Dermatophyte Fungi — P. J. HARE, M.R.C.P. ... 1238

Localised Pretibial Myxœdema — R. S. M. D. INCH, M.R.C.P.E., C. F. ROLLAND, M.R.C.P.E. ... 1239

Polyneuritis with Periarteritis Nodosa — L. A. LIVERSEDGE, M.R.C.P., H. M. LEATHER, M.R.C.P. ... 1241

Mouth-piece for Use with Pneumoflator in Respiratory Paralysis — R. ATWOOD BEAVER, F.F.A. R.C.S., R. W. GILLIATT, M.R.C.P. ... 1243

SPECIAL ARTICLES

The Maladjusted School — W. MARY BURBURY, M.B. ... 1251

A School for Maladjusted Boys ... 1252

The Work of C.I.O.M.S. ... 1254

Wellcome Research Library ... 1255

Health Resources in the United States ... 1255

IN ENGLAND NOW

A Running Commentary by Peripatetic Correspondents ... 1258

LEADING ARTICLES

SOURCES OF CONGENITAL HEART-DISEASE ... 1245

ANTIBIOTIC ENTEROCOLITIS ... 1245

PERIPHERAL NEUROPATHIES ... 1246

ANNOTATIONS

Clinical Research Board ... 1247

Teething-powders ... 1247

Nocturnal Myoclonus ... 1248

Renal Transplantation ... 1248

Corticotrophin and Cortisone in Dermatology ... 1249

The Mother and the Nursery School ... 1249

Radiography of the Maxillary Antrum ... 1250

The Waverley Committee ... 1250

LETTERS TO THE EDITOR

The Insulin Myth (Dr. H. Bourne) ... 1259

Radioactivity of Tobacco and Lung Cancer (Prof. F. W. Spiers, PH.D., Prof. R. D. Passey, M.D.) ... 1259

Intussusception (Mr. P. L. Hipsley, F.R.A.C.S.) ... 1260

Visiting Children in Hospital (Dr. H. Edelston) ... 1261

Sign of Ascites (Dr. R. J. Vakil) ... 1261

Coronary Heart-disease and Physical Activity of Work (Dr. Edgar Rentoul) ... 1261

Diagnosis of Carbon-monoxide Poisoning (Mr. L. T. Minchin, B.SC.) ... 1262

A Consultation Fee? (Mr. R. L. Hanbury, PH.C.) ... 1262

Traumatic Rupture of the Bile-ducts (Mr. H. B. Young, F.R.C.S.E.) ... 1262

"Chemotherapeutic Agent" and "Antibiotic" (Dr. M. Glass) 1263

Circumcision ... 1263

Dextran Sulphate (Dr. Kenneth Walton, Mr. Colin Ricketts, PH.D.) ... 1263

A J.H.M.O. Appointment ... 1264

Barbiturates and Alcohol (Prof. Nicholas Martin, M.R.C.P.) ... 1264

Surgical Emergencies (Mr. N. F. Kirkman, F.R.C.S.) ... 1265

Somatotrophic Hormone and the Pancreas (Prof. Cesare Cavallero) ... 1265

Bact. coli in the Causation of Infantile Diarrhœa (Prof. Tohru Ogawa, M.D., Prof. Jiro Ogawa, M.D.) ... 1266

Intussusception in an Adult (Mr. R. F. Read, F.R.C.S.) ... 1266

Subclinical Poliomyelitis Infections (Dr. Margaret Agerholm) 1267

Cortisone and Rheumatoid Arthritis (Dr. H. C. Geldard; Dr. Bernard Murphy) ... 1268

Marrow Biopsy (Dr. A. B. Hill) 1268

All in the Day's Work (Dr. R. E. Rewell) ... 1269

REVIEWS

Notices of Books ... 1244

PUBLIC HEALTH

Action against Smog ... 1257

Infectious Diseases in England and Wales ... 1257

PARLIAMENT

Air Pollution ... 1269

Question Time ... 1269

OBITUARY

Thomas Yule Finlay ... 1270

NOTES AND NEWS

Library of the Royal College of Physicians ... 1271

Medical War Relief Fund ... 1271

The St. John Ambulance Air-borne ... 1271

Linear Accelerator at St. Bartholomew's Hospital ... 1271

Stress and Atherosclerosis ... 1271

W.V.S. Hostels for Mothers and Children ... 1271

New Filmstrips ... 1271

University of Cambridge ... 1271

University of London ... 1271

Diary of the Week ... 1272

Appointments ... 1272

convenient in use . . .

'STREPTAQUAINE' Solution

brand

a stabilised solution of streptomycin sulphate ready for injection

. . . costs the same as streptomycin

Distributed by:

ALLEN & HANBURYS LTD. BRITISH DRUG HOUSES LTD. BURROUGHS WELLCOME & CO. EVANS MEDICAL SUPPLIES LTD. IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD. PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD.

Manufactured by:

THE DISTILLERS COMPANY (BIOCHEMICALS) LIMITED

Owners of the trademark 'Streptaquaine'

6B/53

Impacted Wax Removed swiftly and safely

Even severely impacted wax can now be safely loosened, softened or dissolved by Cerumol. Pressure syringing is no longer necessary.
Cerumol was clinically tested in a London hospital and is an accepted product for use in a large number of hospitals and general practices throughout the country. It is included in Category No. 4 in the Classified List of Proprietary Preparations issued by the Ministry of Health, and may therefore be prescribed on N.H.S. form E.C. 10. Price under the National Health Scheme, 2s. 8d. per 10 c.c. vial with separate dropper. Also packed in 2 oz. and 10 oz. bottles for hospital use.

Safe, Efficient, Anti-bacterial.
Saves Time and Trouble.

Obtainable through your chemist.

CERUMOL
Regd. TRADE MARK
EAR DROPS

A product of The Laboratories for Applied Biology Limited, London, N.16.

Professional sample and literature available on request from the distributors:

TAMPAX LIMITED,
Medical Department, 110 Jermyn Street, London, S.W.1
Telephone: Whitehall 8696.

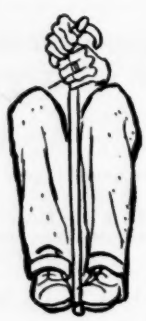
From extreme youth to extreme old age 'Sulphamezathine'
Sulphadimidine B.P.
is the sulphonamide of choice.

It combines high efficacy with exceptionally low toxicity, and is inexpensive to use.

ICI

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.,
A subsidiary company of Imperial Chemical Industries Ltd.
WILMSLOW, MANCHESTER.

Ph.407



HENRY KIMPTON'S PUBLICATIONS

New (10th) Edition — Just Ready

DISEASES OF WOMEN

By **ROBERT JAMES CROSSEN**, A.B., M.D., F.A.C.S.

TENTH EDITION, REVISED

Large Octavo — xiii + 935 Pages — 990 Illustrations, including 41 in Colour — Cloth — Price **£6 15s. net**

New Book — Ready Shortly

CLINICAL DISORDERS OF THE HEART BEAT

By **SAMUEL BELLET**, M.D.

Large Octavo 373 Pages 164 Illustrations Cloth Price **63s. net**

New (2nd) Edition — Ready Shortly

A PRIMER OF CARDIOLOGY

By **GEORGE E. BURCH**, M.D., F.A.C.P.

SECOND EDITION, REVISED AND ENLARGED

Royal Octavo 339 Pages 214 Illustrations Cloth Price **42s. net**

New Book — Ready Shortly

SPATIAL VECTORCARDIOGRAPHY

By **GEORGE E. BURCH**, M.D., F.A.C.P.; **J. A. ABILDSKOV**, M.D.; and **JAMES A. CRONVICH**, M.S.

Royal Octavo 173 Pages 121 Illustrations Cloth Price **37s. 6d.** net (Postage 8d.)

THE PATHOLOGY OF INTERNAL DISEASES

By **WILLIAM BOYD**, M.D., M.R.C.P., F.R.C.P.

FIFTH EDITION

Royal Octavo 866 Pages 391 Illustrations 11 Coloured Plates

Price **77s. net**

New (5th) Edition — Just Ready

SURGICAL TECHNIQUE

By **A. V. PARTIPILO**, M.D., F.A.C.S.

FIFTH EDITION, REVISED AND ENLARGED

Large Octavo 704 Pages Cloth 998 Illustrations on 548 Figures

Price **£5 10s. net**

New Book — Just Ready

THE MANAGEMENT OF PAIN

With Special Emphasis on the Use of Analgesic Block in Diagnosis, Prognosis and Therapy

By **JOHN J. BONICA**, M.D.

Large Octavo 1533 Pages 785 Illustrations on 444 Figures Cloth Price **£7 5s. net**

25 Bloomsbury Way **HENRY KIMPTON** **London, W.C.1**

Medical Book Department of Hirschfeld Brothers Ltd.

Protective Foods in Winter

During the winter months it is specially important that a well-balanced diet containing a good supply of vitamins should be provided to give added protection against infection.

Marmite is a useful protective food, which provides naturally occurring vitamins of the B complex in a palatable form. An appetising hot drink can be made by stirring a teaspoonful of Marmite into a cupful of boiling water or hot milk.

MARMITE

yeast extract

contains

Riboflavin (vitamin B_2) 1.5 *mg. per oz*

Niacin (nicotinic acid) 16.5 *mg. per oz.*

1-oz. 9d., 2-oz. 1/4, 4-oz. 2/4, 8-oz. 4/-, 16-oz. 7/-

Special terms for packs for hospitals, welfare centres and schools

Obtainable from Chemists and Grocers

Literature on request

The Marmite Food Extract Co. Ltd., 35, Seething Lane, London, E.C.3

5313

R·B·C

Rybar Benzocaine Calamine Cream

A bland, sedative germicidal cream possessing powerful local anæsthetic properties. It is of great value in the treatment of eczematous conditions, pruritus, tinea and other skin infections due to bacteria or fungi. The soothing effect produced on the application of R.B.C. in cases of intractable itching materially assists healing by promoting sleep and preventing rubbing and scratching.

Formula :—

Phenylmercuric Nitrate	0.10%
Iso-butyl para-aminobenzoate	1.00%
N-butyl para-aminobenzoate	1.00%
Benzocaine	8.00%
Cholesterol	0.10%
Calamine	10.00%
Hydrophilic Base to	100.00%

All percentages w/w

Mode of issue : Collapsible tubes containing 1 oz.

May be freely prescribed on Form EC10.

Professional sample and literature on request from:

RYBAR *Laboratories* LTD.

TANKERTON • KENT

PROTEIN THERAPY

IN ALLERGIC DISORDERS

Specific Protein Therapy shows many advantages over the earlier forms of non-specific treatment for allergic disorders such as asthma, hay fever, migraine, etc.

Allergen Diagnostic Test Solutions—Duncan are issued in simple or multiple group tests. Comprehensive outfits are supplied containing a 2 cc. bottle of each multiple test and provide a valuable method of diagnosing allergic disorders.

DUNCAN, FLOCKHART & CO. LTD.

EDINBURGH LONDON

Anti-Anaemia PREPARATIONS

OXOID LIVER EXTRACT (IM)

A highly potent whole liver extract containing, in addition to the true pernicious anaemia principle, the greater part of the other water soluble active substances in the liver, including particularly the members of the vitamin B complex.

Ampoules — 2 cc. Bottles 10 cc. and 20 cc.

'LIVEROID'

A concentrated preparation of the uncoagulated juice of liver, fortified with iron and glycerophosphates.

Bottles—3½ and 8 fl. oz.

'LIVOX'

Capsules containing liver concentrate reinforced with B group vitamins and minerals.

Bottles of 100 and 500

'ERYTHOID'

Desiccated gastric tissue — *Bottles 5 oz. and 8 oz.*

LITERATURE GLADLY FORWARDED UPON REQUEST

OXO LIMITED (Medical Dept.)
Thames House, Queen St. Place, London, E.C.4.
Phone: Central 9781

CEREVON

Ferric Free organic iron therapy

CEREVON provides stabilised ferrous gluconate, an organic iron salt, now established as superior to inorganic iron preparations in the treatment of iron deficiency anaemias. Its greater absorption and utilisation produce a speedy therapeutic response. Nausea and upset of the alimentary tract do not occur, even in patients normally sensitive to iron.

The Ferrous Gluconate used in our preparations is of our own manufacture and is entirely free from ferric iron.

CEREVON TABLETS

FORMULA: Each tablet contains Ferrous Gluconate, 0.3 G. Available in bottles.

PRICES: 100 Tablets 3/2 + P.T.
1000 Tablets 29/8 + P.T.

CEREVON ELIXIR

FORMULA: Each teaspoonful contains Ferrous Gluconate, 0.3 G.; Aneurine Hydrochloride, 1 mgm; Riboflavin, 1 mgm; Nicotinamide, 10 mgm; Available in bottles.

PRICES: 4 fl. oz. 5/- 20 fl. oz. 24/-
40 fl. oz. 46/- 80 fl. oz. 90/-

CEREVON

elixir or tablets

Prescribe CEREVON by name on form E.C. 10.

CALMIC LIMITED · CREWE HALL · CREWE · TEL: 3251-5

Efficacy and Convenience in Antacid Therapy

In the management of gastro-intestinal disorders associated with hyperchlorhydria, *'Milk of Magnesia' Tablets have proved of outstanding value.

Exerting an immediate and prolonged neutralising action, 'Milk of Magnesia' Tablets offer a valuable prescription to the physician for the treatment of simple digestive upsets, including gastritis and duodenitis, and equally so, for those cases where frank ulceration has occurred.

Pleasantly mint flavoured and conveniently portable, they are always ready to hand whenever the need of alkalisation arises.

'Milk of Magnesia' REGD. TABLETS

Available in bottles of 30, 75 and 150 tablets.

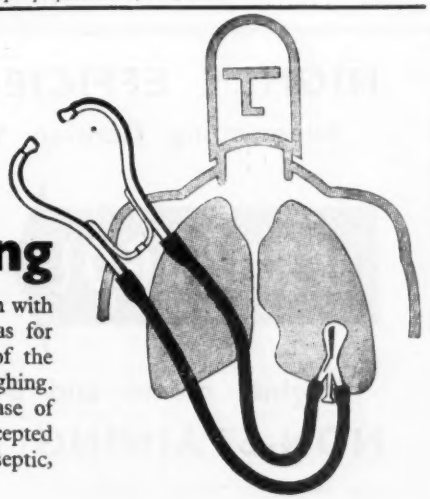
The Chas. H. Phillips Chemical Co. Ltd. 1, Warple Way, London, W.3.

** 'Milk of Magnesia' is the trade mark of Phillips' preparation of magnesia.*

For

all conditions of the respiratory tract characterised by

Excessive Coughing



TERPOIN Elixir has long enjoyed high reputation with physicians throughout Great Britain and overseas for the effective relief it affords in all conditions of the respiratory tract characterised by excessive coughing. TERPOIN is presented in a palatable syrup base of bright golden colour and is well-tolerated and accepted by young and old. It is expectorant, mildly antiseptic, sedative and does not induce cerebral depression.

TERPOIN is thus indicated in the distressing and exhausting "night cough" so frequently associated with acute and chronic bronchitis, bronchial asthma and pulmonary tuberculosis. Alleviation is prompt and restful, recuperative sleep, so valuable in the treatment of such conditions, is ensured.

Clinical sample and literature gladly sent on request.

TERPOIN

Anti-Tussive Elixir

(Contains per 100 parts)

Eucalyptol, B.P. 0.083, Terpin. Hydr., B.P.C. 0.183, Codein Phosph., B.P. 0.366, Menthol, B.P. 0.366.

Dispensing cost per dose—less than 1½d.

HOUGH, HOSEASON & CO. LTD · CHAPEL STREET · MANCHESTER 19

5

At Christmas Time

℞ KAYLENE

For Indiscretions of Diet, Diarrhœa, Food Poisoning, Excess of Alcohol, Acute Colitis, and in all conditions due to toxic absorption from the bowel

★ *Doses taken from large Dispensing Packs of Kaylene are shown to cost less than those of the equivalent B.P. product.*

Samples and literature on request

KAYLENE BRAND TERRA SIC. LLATA

KAYLENE (CHEMICALS) LIMITED

Sole Distributors: **ADSORBENTS, LTD.,** WATERLOO ROAD, LONDON, N.W.2

HIGHLY EFFICIENT TREATMENT

Superseding Gentian Violet

PRUVAGOL

NON-SPECIFIC CERVICITIS
VAGINAL THRUSH
PRURITUS VULVAE
MONILIA INFECTIONS

Vaginal cream and pessaries

NON-STAINING AND NON-IRRITATING

Each PRUVAGOL *Pessary* contains:—
Sodium salt of diamino disulphomethyl fuchsonium sulphonate ... 0.06%
Sodium biborate 0.4%

PRUVAGOL *Cream* contains:—
Sodium salt of diamino disulphomethyl fuchsonium sulphonate ... 0.09%
Sodium biborate 0.6%

References: *B.M.J.*, 14.7.51, p. 118; *B.M.J.*, 11.10.52, p. 813.

Packings: Pessaries in containers of 12, 50, and 100. Cream in tubes with applicators and hospital packs.

Literature and samples available on request. *Prescribable on Form E.C.10.*

CAMDEN CHEMICAL CO. LTD., 61 GRAY'S INN ROAD, LONDON, W.C.1

". . . . . **PROTEOLYSED LIVER** contains the haemopoietic principle, folic acid, other members of the vitamin B complex and amino-acids, and has therefore been found to be effective in a number of anæmias in which purified preparations have no action. It is administered by mouth in a daily dose of from 2 drachms to 2 ozs. Clinical experience has shown that the smaller doses are fully effective in pernicious anæmia. The main value of the preparation is that, in larger doses, it is often beneficial if not completely successful in certain megaloblastic anæmias refractory to parenteral liver extracts (Davis and Davidson, 1944) and in some cases of megaloblastic anæmia in pregnancy."

'Disorders of the Blood.' Sixth Edition.

Further details and samples of "Pabyrn" Proteolysed Liver B.P.C. are available from

PAINES & BYRNE LTD., Greenford, Middlesex

for the treatment of local bacterial and fungal infections

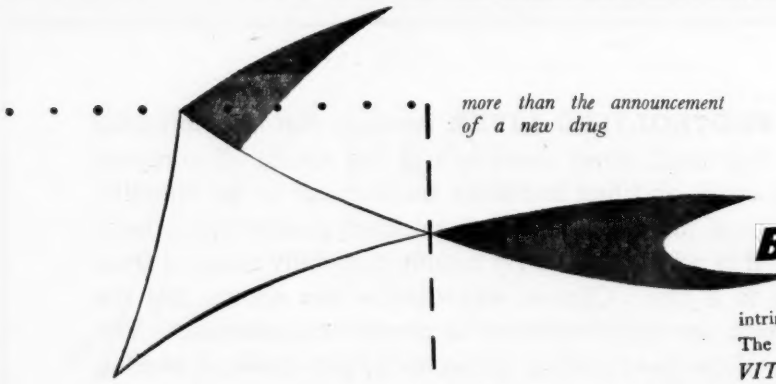
PROCID

Sodium Propionate Preparations

have great therapeutic efficiency with freedom from undesirable side-effects. Organisms do not develop immunity to "Procid" nor is there any risk of sensitization. "Procid" is non-toxic and has anti-histamine properties. *It is recommended as an alternative to the anti-biotics and sulphonamides in local treatment, reserving these drugs for general use.*

"Procid" is presented as "Procidets" (throat lozenges), Nasal Drops, Ointment 15%, Ear Drops, Ear Ointment, Eye Solution, Eye Ointment, Pessaries, Vaginal Cream and "Procidol" General Antiseptic. Samples of any of these preparations and a copy of our new publication "The Therapy of Sodium Propionate" will be gladly sent on request. All "Procid" preparations can be prescribed on Form E.C.10.

Medical Division, HARKER STAGG LIMITED, Emmott Street, London, E.1.



more than the announcement of a new drug

BIOPAR

(Vitamin B_{12} and intrinsic factor).
The beginning of a new Era in
VITAMIN B_{12} THERAPY

Effective ORAL replacement for injectable Vitamin B_{12} in ALL conditions previously considered amenable only to injected Vitamin B_{12}.

BIOPAR TABLETS

Offer two-fold economy—low cost per dose and the economy of oral therapy over injections.

write for literature and samples to

Telephone
CLERKENWELL 9011
Telegrams
"ARMOSATA-PHONE"
LONDON

THE ARMOUR LABORATORIES
(ARMOUR & COMPANY LTD.)
LINDSEY STREET, LONDON, E.C.1.

HARVEY
1578—1657

This scientist and doctor of medicine rose to great eminence and became Physician Extraordinary to James I. He is most famed, however, for his research work on the blood and his discovery of its circulation.

IMPROVED PRESENTATION

FOR IRON DEFICIENCY ANÆMIAS, ferrous sulphate is universally accepted as the most efficient compound for oral administration. The improved method of presentation in 'Plastules' ensures *maximum* absorption and utilisation. The tasteless, easy-to-swallow capsules rapidly disintegrate and the ferrous sulphate in a semi-solid condition is quickly absorbed, with avoidance of gastric irritation. The addition of Folic Acid stimulates production of erythrocytes, and the dried yeast increases appetite and re-inforces the action of the iron.

'Plastules' are available in four varieties: Plain; with Liver Extract; with Folic Acid; and with Hog Stomach.

'PLASTULES'
Trade Mark
HÆMATINIC COMPOUND

Wyeth

JOHN WYETH & BROTHER LTD · CLIFTON HOUSE · EUSTON ROAD · LONDON · N.W.1

ROCHE PRODUCTS LTD

announce

that their offices have been transferred from

Welwyn Garden City

to

15 Manchester Square, London, W.1

Telephone: Welbeck 5566

All correspondence, orders and telephone enquiries should be directed to the new address from Monday 7th December, 1953.

The manufacturers of DETTOL submit

the following facts to your attention

Wide mention in medical literature has made Dettol a text-book antiseptic. Wide clinical use has attested the efficiency of Dettol in literally millions of cases which range from minor accident to major operation.

EFFICIENCY

Dettol is an efficient antiseptic which, moreover, retains a high degree of efficiency in the presence of organic matter.

TOLERATION

Dettol is well tolerated on the skin and tissues in high concentrations. Moreover, its non-toxicity offers a high degree of safety to doctor, nurse and patient.

STRENGTH

The fact that Dettol is well tolerated by the tissues permits dilutions to be recommended for clinical purposes which provide a margin of safety even when a reasonable amount of organic material is present.

ACTIVITY

Dettol is active against both Gram-positive and Gram-negative micro-organisms. Under standard conditions of test a dilution of 1 in 200 kills Staph. aureus in 10 minutes; a 1 in 500 dilution kills Strept. pyogenes in 10 minutes.

COMPATIBILITY

Dettol is not incompatible with soap, traces of which need not be removed before application.

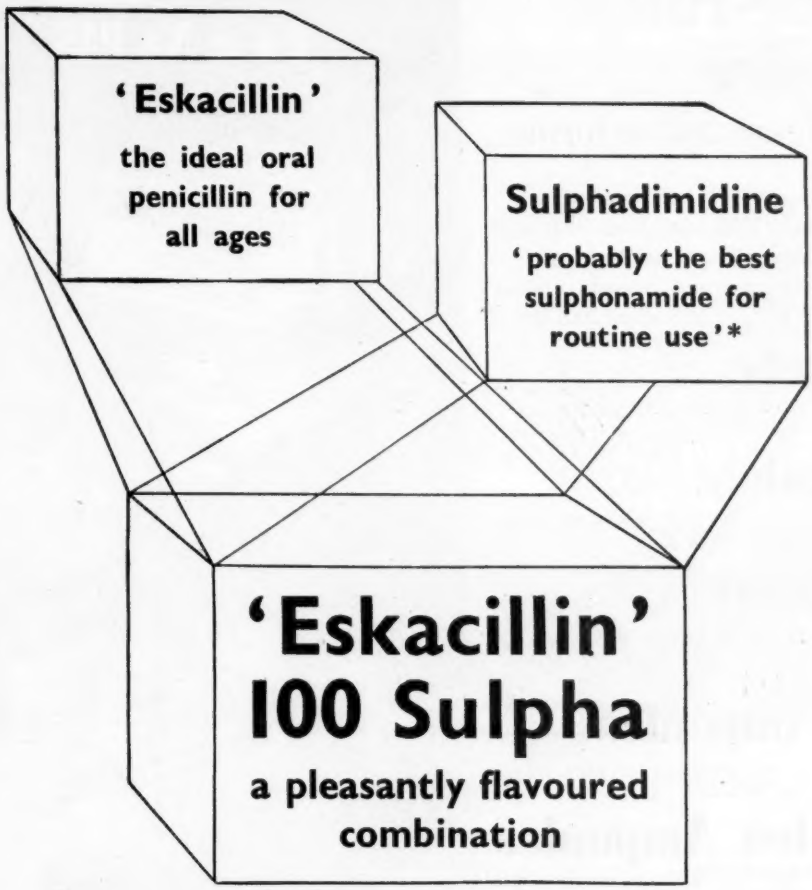
PLEASANTNESS

Dettol is non-poisonous, safe, pleasant and economical in use. It has an agreeable smell

DATA

Bacteriological data and the literature of Dettol are available on request. Dettol is packed in 2 and 5 gallon, Purchase Tax free Dispensing containers.

NEW
'ESKACILLIN' 100 SULPHA



Wide range of antibacterial activity
Enhanced antibacterial potency
Lessened risk of acquired bacterial resistance
Rapidly absorbed
Easily administered

'Eskacillin' 100 Sulpha is available in 2 fl. oz. (56 ml.) bottles.
Each standard medical teaspoonful (1 fl. dram : 3·5 ml.) contains 100,000 I.U. crystalline potassium penicillin G and 0·5 g. sulphadimidine.

*NATIONAL FORMULARY (1952) p. 33.

MENLEY & JAMES, LIMITED, COLDHARBOUR LANE, LONDON, S.E.5

ECP123

for Smith Kline & French International Co., owner of the trade mark 'Eskacillin'

For wide-range choice

of administrative forms...

Every recognized and commonly used means of PAS administration is made available through one or other of the various forms of 'Aminacyl' brand of Calcium PAS or of Sodium PAS B.P.C.

Cachets

Cryst. Ca or Na PAS: 1.5 g., 100's and 500's; 2.0 g., 80's and 400's.

Granulate

Cryst. Ca PAS: 100 g., 400 g., 2,000 g. packs

Dragées

Cryst. Ca or Na PAS: 0.4 g., 0.5 g., 0.75 g., 250's and 1,000's.

Dry Ampoules

1 and 6 × 2.41 g. crystal. = 2.0 g. Na PAS anhyd.

Solution Ampoules

Na PAS: 20% topical; 2.8% (isotonic) ophthalmic.

Bulk Powder

Cryst. Ca or Na PAS: 100 g., ¼, ½, 1 and 5 kg.

Intravenous

Purified crystalline Na PAS for I.V. solutions; bottle of 250 g.

Further information from the Medical Dept.,
A. WANDER LIMITED,
42 Upper Grosvenor Street,
Grosvenor Square, London W.1.

CANADA: A. Wander Ltd., Peterborough, Ontario.
AUSTRALIA: A. Wander Ltd., Devonport, Tasmania.
NEW ZEALAND: A. Wander Ltd., Christchurch.
INDIA: Grahams Trading Co. (India) Ltd., 16 Bank Street, Bombay.
PAKISTAN: Grahams Trading Co. (Pakistan) Ltd., P.O. Box 30, Karachi.
CEYLON: A. Baur & Co. Ltd., Colombo.

M.374

Clinical Research...

...in collaboration with the principal clinical Institutions, completes the cycle of studies and experiments necessary before a new or perfected therapeutic compound can be released.

The unremitting quest of

CARLO ERBA

THERAPEUTIC RESEARCH INSTITUTE

Clinical Laboratories

is, as always, true to this principle.

CARLO ERBA MILANO

Triple Sulfa Cream

Active against a wide variety of vaginal pathogens

relieves symptoms
eliminates discharge
hastens healing

in nonspecific leucorrhea
"... complete or marked relief of discharge." [1]

following cervical cautery
"... The absence of the usual postcautery discharge and bleeding was very striking." [1]

following vaginal plastic procedures
"... a sound addition to the postoperative period ..." [2]

in routine postpartum care
"... a definite addition to the postpartum care of the patient." [3]
"... reduced the average healing time (of cauterized postpartum cervical erosions) to one-half that following cauterization alone." [4]

Sulphathiazole, N'Acetylsulphanilamido, N'Benzoylsulphanilamide with urea peroxide.

Available in 2¾ oz. tubes.

On original prescriptions specify "Triple Sulfa Cream with applicator."

1. Am. J. Obst. & Gynec. 58:176, 1949.
2. Am. J. Obst. & Gynec. 55:511, 1948.
3. Am. J. Obst. & Gynec. 61: 680, 1951.
4. Am. J. Obst. & Gynec. 62:1106, 1951.

LITERATURE ON REQUEST

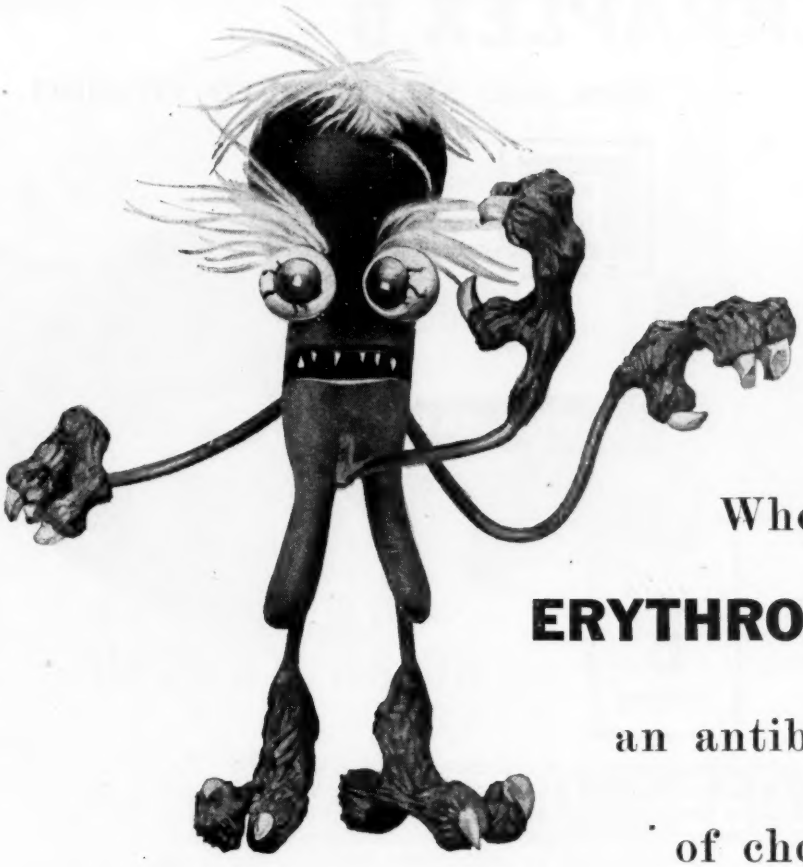
widely indicated ...
wisely prescribed

Ortho *Pharmaceutical Limited*

HIGH WYCOMBE · BUCKINGHAMSHIRE · ENGLAND

Makers of Gynaecic Pharmaceuticals

Ortho



When is ERYTHROCIN* an antibiotic of choice?

A DRUG OF CHOICE...
against staphylococci — because of the high incidence of staphylococcic resistance to other antibiotics.

A DRUG OF CHOICE...
orally against streptococcal and pneumococcal infections, when patients are sensitive to other antibiotics or these cocci are resistant.

A DRUG OF CHOICE...
because it does not materially alter normal intestinal flora; gastrointestinal disturbances are rare; no serious side effects reported.

ADVANTAGEOUS...
because the special acid-resistant coating, developed by Abbott, and Abbott's built-in disintegrator, assure rapid dispersal and absorption in the upper intestinal tract.

ERYTHROCIN...
is indicated in pharyngitis, tonsillitis, scarlet fever, pneumonia, erysipelas, osteomyelitis, pyoderma and other conditions.

Abbott

Literature is available from
ABBOTT LABORATORIES LTD.,
PERIVALE, GREENFORD, MIDDLESEX

* TRADE MARK ERYTHROMYCIN, ABBOTT, *CRYSTALLINE*

*AA 15

FERRAPLEX B

IRON AND STANDARDISED VITAMINS

ADVANTAGES FERRAPLEX B, by combining adequate iron dosage with standardised vitamin content, provides a comprehensive and efficient hæmatinic compound for routine use, particularly in pregnant and undernourished women, in adolescence, in hæmorrhagic conditions and in the debility of advancing age.

* In recent years it has been shown that simultaneous administration of vitamin C and the B complex group together with iron gives much better results in hypochromic anæmias. The natural vitamin B complex used in FERRAPLEX B is a concentrate prepared from brewers' yeast.

* The comprehensive "one tablet" formula, the *standardised* vitamin potency and the reasonable price of FERRAPLEX B entirely conform with current economic requirements.

PACKINGS AND PRICES.
FERRAPLEX B tablets are available in bottles of 50 at 5/3d. and 250 at 23/3d. Retail prices subject to Professional discounts.

COMPOSITION

The average daily dose of six FERRAPLEX B tablets contains:—

FERROUS SULPHATE .....1 gramme
COPPER CARBONATE .....2 mg.
ASCORBIC ACID (Vitamin C).....50 mg.
NATURAL VITAMIN B COMPLEX.....2 grammes
including
Aneurine hydrochloride (B_1).....3 mg.
Riboflavine (B_2) .....6 mg.
Nicotinamide .....30 mg.
pantothenic acid, pyridoxine, and folic acid, choline, inositol, biotin, para-aminobenzoic acid and other naturally occurring factors of the vitamin B complex.

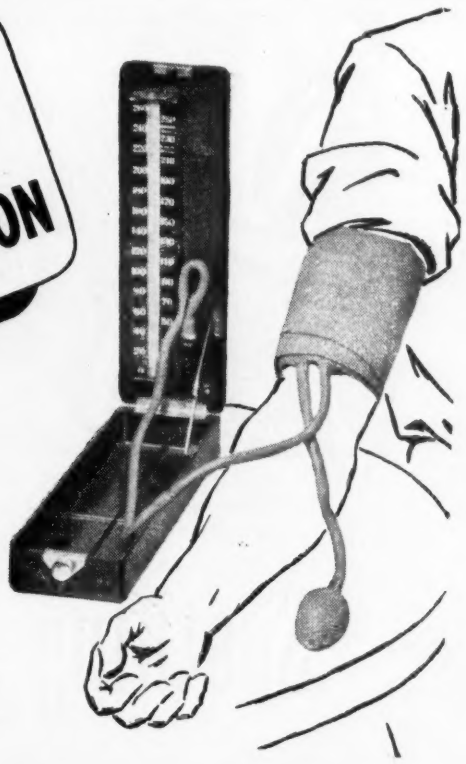
FERRAPLEX B

is manufactured in the laboratories of

C. L. BENCARD LTD

PARK ROYAL · LONDON · N.W.10

A STRIKING EXAMPLE OF DRUG COMPLEMENTATION



IN MODERATE, SEVERE AND RESISTANT HYPERTENSION

• • • • **RAUWILOID + VERILOID**

The calming, relaxing and mildly hypotensive effect of Rauwiloid, when combined with the more potent Veriloid (brand of standardized alkaloids of Veratrum viride), leads to a unique type of drug complementation. The patient's Veriloid requirement is decreased, side effects, if present, disappear and significant hypotensive response is produced. Not only are the diastolic and systolic pressures lowered significantly, but also at the same time the patient feels better. Headache and dizziness disappear and tachycardia, when present, is replaced by mild bradycardia.

On the basis of this apparent synergism, Rauwiloid+ Veriloid leads to excellent results in moderate, severe and resistant hypertension. Each tablet contains 1 mg. of Rauwiloid and 3 mg. of Veriloid. Average dose: one tablet three or four times daily, preferably after meals, at intervals of not less than four hours.

In mild and labile hypertension . . . .

• • • • **RAUWILOID**

Rauwiloid produces excellent results in early, mild or labile hypertension. Blood pressure is significantly reduced, a sense of well-being is quickly experienced and mild bradycardia replaces tachycardia. Toxic reactions do not occur, even when the amount of drug administered is three or four times the usual dose. Side effects are rare. Initial dose: 4 mg. (2 tablets) once daily; maintenance dose: 2 mg. daily. Rauwiloid is a standardized alkaloidal extract of Rauwolfia serpentina. Each batch is tested in dogs for its sedative, hypotensive and bradycardic effects. Hence pharmacological uniformity is assured.

"RAUWILOID" and "VERILOID" are Registered Trade Marks

RIKER LABORATORIES LTD. 29 KIRKEWHITE ST., NOTTINGHAM

ORIGINAL PRODUCTS OF RIKER RESEARCH.

WHILE MAN SLEEPS, *the badger emerges from its 'cete' or burrow, and makes nocturnal expeditions in search of its food. But some of mankind, too, are awake—unwillingly. Their problem is:*

Soothing the cough that causes insomnia

In tracheitis and bronchitis the sleeplessness caused by a persistent, unproductive cough can be very exhausting. Tusana Cocillana Cough Linctus is invaluable in such cases. It provides a blend of expectorants to loosen the tenacious mucus, and the central sedative, codeine, to depress the cough reflex. By breaking the vicious circle of coughing and irritation, Tusana allows the patient to sleep and gather strength for recovery. The tendency of codeine to cause constipation is offset by the inclusion of a little extract of senna in the formula.

Supplied in bottles of 4 fl.oz. – 2/9d. or in tax-free dispensing packs of 20 fl.oz. – 10/7½d. and 80 fl.oz. – 38/3d.

Prices net to the Medical Profession in Great Britain

TUSANA

COCILLANA COUGH LINCTUS

Literature and further information from the Medical Department

BOOTS PURE DRUG COMPANY LIMITED NOTTINGHAM ENGLAND

Boots

S174

AN EFFECTIVE **ORAL** MERCURIAL DIURETIC

Effective diuretic therapy by oral administration is now made possible by MERCLORAN. In many cases one tablet a day, equivalent to 10 mg mercury, has been sufficient to keep cardiac patients free from oedema. Where more intensive treatment is needed MERCLORAN, being well tolerated by the majority of patients, can be taken more often and in increased doses. The need for injection is thus frequently eliminated.

In severe cases, it is often desirable to initiate *treatment parenterally, in which case the chemically related compound MERCARDAN (meralluride Sodium U.S.P.) is available.*

MERCLORAN

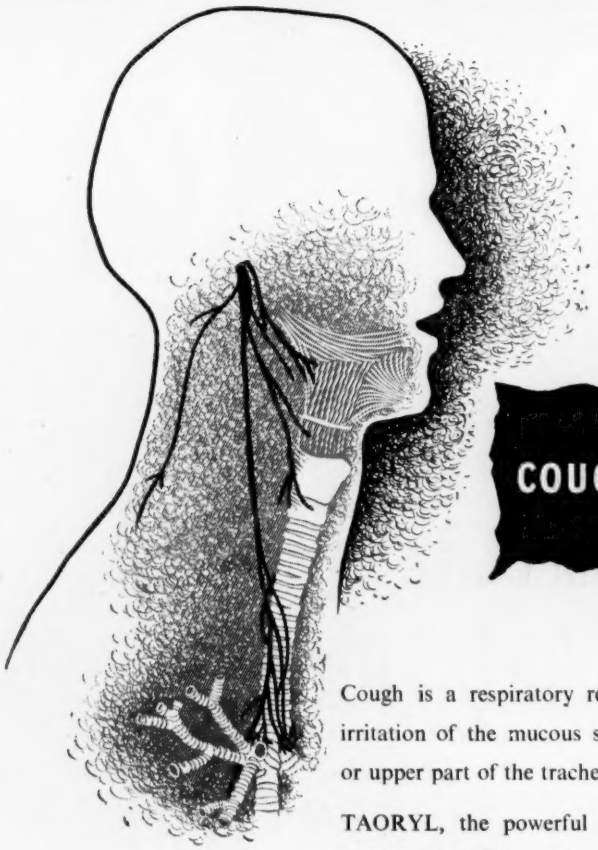
(CHLORMERODRIN N.N.R.)

IN BOTTLES OF 25 AND 250 TABLETS

AND **MERCARDAN** FOR PARENTERAL USE

PARKE, DAVIS & COMPANY, LIMITED *(Inc. U.S.A.)* HOUNSLOW, MIDDLESEX. Telephone: Hounslow 2361 570

19



COUGH CONTROL

Cough is a respiratory reflex induced by irritation of the mucous surfaces of the pharynx or upper part of the trachea.

TAORYL, the powerful antispasmodic, combines peripheral sedation with a selective inhibitory action on the cough centre. Safe to use for long periods without addiction, it provides highly effective therapy in all cases of irritant and spasmodic cough. It is comparatively non-toxic, free from side effects in normal dosage, and readily administered to children.

Taoryl

Bis [1-(carbo-β-diethyl-aminoethoxy)-1-phenyl-cyclopentane]-ethane disulphonate.

an anti-tussive with broncholytic action

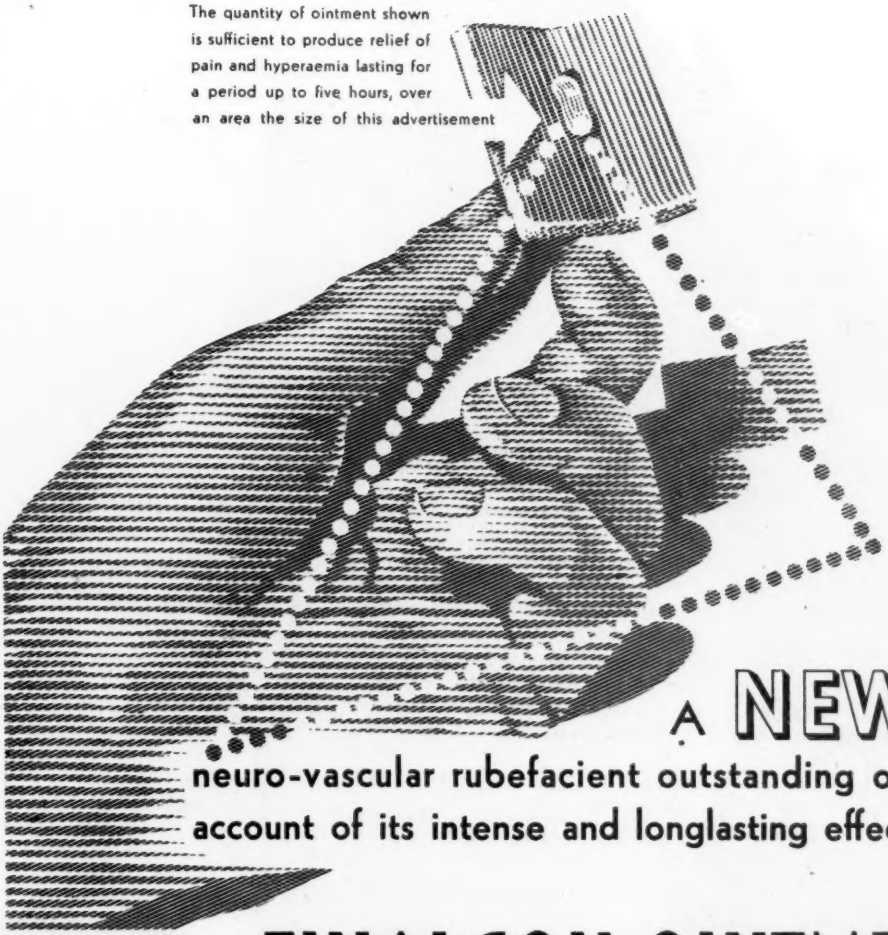
Geigy

PHARMACEUTICAL LABORATORIES GEIGY, LTD.

Rhodes, Middleton, MANCHESTER

PH. 55

The quantity of ointment shown is sufficient to produce relief of pain and hyperaemia lasting for a period up to five hours, over an area the size of this advertisement



A NEW

neuro-vascular rubefacient outstanding on account of its intense and longlasting effect

FINALGON OINTMENT

Nonylic acid vanillylamide 0.4% and Nicotinic acid-β-butoxyethyl ester 2.5% in a suitable ointment base (packed in tubes of 20 g.)

for the treatment of all types of rheumatic conditions

LEWIS LABORATORIES LTD., LEEDS

Falling Leaves....
lower temperatures sneezes—and winter approaches with its usual crop of chest complaints. At this time of year BENYLIN EXPECTORANT is of special value. It alleviates stuffiness and gives welcome relief from the irritation of bronchitis, laryngitis and other respiratory troubles. Prepared as a pleasant raspberry flavoured syrup, Benylin Expectorant is suitable for children and adults.
In bottles of 4, 16 and 80 fluid ounces. (Sch. 4)
Benylin
EXPECTORANT

MEDICAMENTA VERA

Parke, Davis & Company, Limited *Inc. U.S.A.* Hounslow, Middlesex

Telephone Hounslow 2361

420

The NEW **M&B** *ganglion-blocking agent—*

Three reasons why the 'Ansolysen' range of preparations merit consideration in cases of hypertension suitable for this method of treatment.

1 **Effective in a high percentage of cases when given orally**

2 **Full control of blood pressure possible at low dosage**

3 **Prolonged action means less frequent administration**

'Ansolysen' is supplied as 40 mgm. and 200 mgm. tablets, as 0·5% and 2·5% solutions for injection, and as a 2·5% Retard solution with polyvidone.

Detailed information is available on request

MANUFACTURED BY MAY & BAKER LTD

MA1392

Distributors: PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD · DAGENHAM

WHICH WOULD YOU RATHER . . . ?

'DIBENCIL' ORAL SUSPENSION

presents the newly developed salt of penicillin, N: N'dibenzylethylenediamine dipenicillin G, as a stable, pleasantly flavoured preparation ready for use. It is well tolerated and is readily accepted by the youngest child. Doses of 300,000 units (one large teaspoonful) taken every six hours, are usually sufficient for either prophylaxis or treatment of the milder infections caused by penicillin sensitive organisms. In severe infections it is usually advisable to supplement this dosage, initially, with penicillin by injection.

When it is a question of choice, oral penicillin therapy with the new *'Dibencil' Oral Suspension* is preferred because:—

- It is therapeutically effective.
- It is convenient for both doctor and patient.
- It is extremely palatable and free from the taste of penicillin.
- It is ready for use.
- It retains its potency at ordinary room temperature for at least 18 months.

PRESENTATION

Bottles of 50 *c.c. Containing* 300,000 *units in each* 5 *c.c. (one large teaspoonful).*

'Dibencil' Trade Mark **ORAL SUSPENSION**

(N : N'dibenzylethylenediamine dipenicillin G.)

ICI **IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED**

A subsidiary company of Imperial Chemical Industries Limited **WILMSLOW, MANCHESTER**

Ph.417

Adequate
Cough Sedation
permits
QUIET, UNINTERRUPTED SLEEP

In the treatment of unproductive cough in children and adults the advantages of ETHNINE lie in its effectiveness with low toxicity, and its freedom from side-effects such as constipation and digestive upset.

For children, ETHNINE is indicated whenever a cough sedative is considered advisable particularly in the treatment of whooping cough, irritation of the upper respiratory tract, and the cough associated with enlarged tonsils and adenoids before surgical measures are taken.

The sedative action of ETHNINE is particularly useful when it is desired to ensure a restful night's sleep uninterrupted by paroxysms of coughing.

ETHNINE

CONTAINING PHOLCODINE

Literature and sample on application

In bottles of 4 and 80 fluid ounces

ALLEN & HANBURYS LTD LONDON E 2
TELEPHONE BISHOPSGATE 5201 (20 LINES) TELEGRAMS "GREENBURYS BETH LONDON"

HYDRO CORTISONE

MADE IN ENGLAND

AND

CORTISONE

MADE IN ENGLAND

ROUSSEL

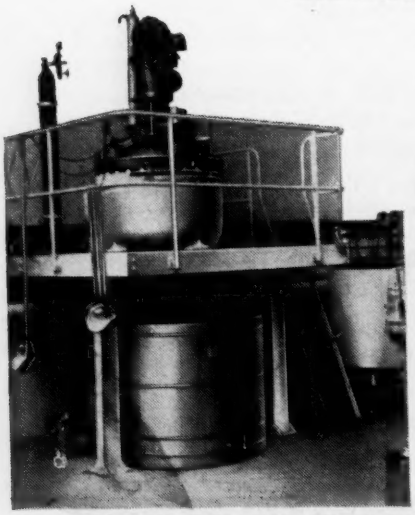
HYDROCORTISONE ACETATE. 25 mg. per cc.; 5 cc. suspension

CORTISONE TABLETS. 5 mg. & 25 mg. Cortisone Acetate; bottles of 20

INJECTION. 25 mg. of Cortisone Acetate per cc.; 10 cc. vials

EYE DROPS containing 1% Cortisone Acetate; 3 cc. dropper bottles

EYE OINTMENT containing 1% Cortisone Acetate; Tubes of 3 G.

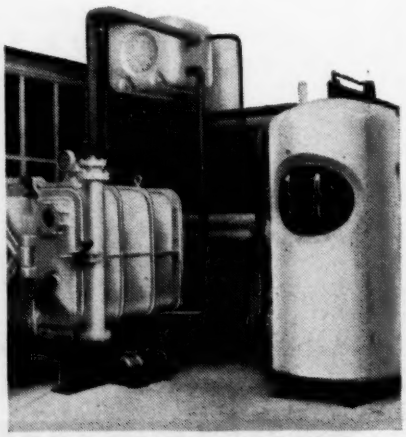


UNITED KINGDOM

We regret that we are not permitted to accept direct orders for the home market for Hydrocortisone and Cortisone, since they are distributed exclusively by the Ministry of Health.

EIRE AND EXPORT

Ample supplies are available for Eire and Export markets; enquiries are welcome



ROUSSEL LABORATORIES LTD., 847 HARROW ROAD, LONDON, N.W.10. LADBROKE 3608

Now available—

THE NEW INSULINS

'WELLCOME' BRAND

Insulin Zinc Suspension (Amorphous)—Semilente

with an action of 12 to 18 hours

Insulin Zinc Suspension—Lente

with a duration of activity of about 24 hours

Insulin Zinc Suspension (Crystalline)—Ultralente

with an action of about 24 to 36 hours

These new insulins, which are entirely of British manufacture, consist of Insulin with zinc suspended in a special buffer ; no added protein is present. They may be mixed with each other to give intermediate duration of action, but they should not be mixed with other types of insulin.

The full range of 'Wellcome' brand Insulin products now includes these Insulin Zinc Suspensions, unmodified Insulin, Globin Insulin, Protamine Zinc Insulin and Isophane Insulin (N.P.H.).

'WELLCOME' BRAND

INSULIN ZINC SUSPENSIONS

BURROUGHS WELLCOME & CO., LONDON

(THE WELLCOME FOUNDATION LTD.)

'MEPILIN'
for the menopausal patient

HITHERTO AVAILABLE AS TABLETS AND NOW ALSO AS A PLEASANTLY FLAVOURED ELIXIR

The association of methyltestosterone and ethinylœstradiol in Mepilin produces a more complete response in the treatment of menopausal disorders than can be obtained by the use of œstrogens alone.

The presence of methyltestosterone enables a reduction in œstrogen dosage to be made; thus undesirable side effects such as breast turgidity and pelvic congestion are avoided and the risk of withdrawal bleeding is reduced. An increased feeling of confidence and well-being is produced which is both mental and physical.

Each teaspoonful (4 ml.) of Mepilin Elixir and each Mepilin Tablet contains ethinylœstradiol 0.01 mg. and methyltestosterone 3 mg.

'MEPILIN' TABLETS Bottle of 25 at 4/4 and 100 at 14/6
'MEPILIN' ELIXIR Bottle of 4 fl. oz. at 6/- and 20 fl. oz. at 23/- *Basic N.H.S. Price.*

DOSAGE: Menopause and geriatric conditions: average cases—3 tablets or 3 teaspoonfuls daily. Premenstrual tension and dysmenorrhœa—2 tablets or 2 teaspoonfuls daily from 10th to 22nd day of the menstrual cycle.

Literature and specimen packings are available on request

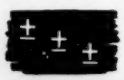
THE BRITISH DRUG HOUSES LTD. (Medical Department) LONDON N.1

MEP/B/5

'ALUHYDE' REGD.
for prompt, safe symptomatic medication in hyperchlorhydria and peptic ulcer

'ALUHYDE' tablets present a new combination with these advantages...

'ALUHYDE' effects safe, reliable, non-systemic neutralization by means of two of the most preferred modern antacid adsorbents...



'ALUHYDE' permits of quick mental sedative effect by its inclusion of a barbiturate recognized for minimal cumulative potential...

'ALUHYDE' provides antispasmodic action through its content of an agent long known for its favourable influence against hypermotility...

Formula— Each tablet:

Aluminium hydroxide B.P.C.	3.75 gr.
Magnesium trisilicate B.P.	3.75 gr.
Quinalbarbitone sodium B.P.	0.50 gr.
Tinct. Belladonnæ B.P.	3 m.

Packings—Regular packs of 50; bottles of 500 (dispensing)

Samples available on personally signed request of qualified physicians only

MULTIPAX CHEMICALS LIMITED
32 SHAFTESBURY AVENUE, LONDON W.1 Phones: GERrard 8774/8493

M C L

2AS3

THE UNIVERSITY AND SURGERY*

M. F. A. WOODRUFF
M.D., M.S. Melb. F.R.C.S.
PROFESSOR OF SURGERY IN THE UNIVERSITY OF OTAGO, NEW ZEALAND

IT is salutary for every university teacher to consider his own particular discipline in relation to the purpose of the university as a whole. But what is the purpose of a university? I propose to examine three fundamentally different answers to this question and to discuss their significance for a teacher of surgery.

The first, which Sir Walter Moberly (1949) calls the *Christian–Hellenic* answer, is embodied in Newman's *Idea of a University* (1852). It affirms that the main objective of a university is intellectual culture. True university education thus avoids narrow specialism, on the one hand, and superficiality, on the other; it

"gives a man a clear, conscious view of his own opinions and judgements, a truth in developing them, an eloquence in expressing them, and a force in urging them. It teaches him to see things as they are, to go right to the point, to disentangle a skein of thought, to detect what is sophistical, and to discard what is irrelevant. It prepares him to fill any post with credit, and to master any subject with facility."

The second, or in Moberly's terminology the *liberal* answer, is that the prime object of a university is the pursuit of new knowledge for its own sake, irrespective of its possible applications. Communication of knowledge, especially at undergraduate level, is of secondary importance.

The third, or *technological and democratic* answer, is predominantly utilitarian. It affirms that the function of a university is to Serve the state by providing the experts and the ideas necessary to maintain material progress. Education must be strictly vocational, and the value of research depends on whether or not it provides results of practical importance. Learning for learning's sake is an idol to be demolished, and, as Moberly puts it, "the hero, or archetypal figure, is the man who makes two blades of grass grow where one grew before." This concept reflects the enormous development of applied science and gains much of its strength from the fact that it is just in this field that the universities are most closely in touch with what Ortega denotes by culture: "the vital system of ideas of a period" (Ortega y Gasset 1946).

It is clear that these three concepts, if pushed to extremes, are mutually incompatible. I believe nevertheless that each contains elements of truth, and that a synthesis can and must be made. I submit, in short, that intellectual culture, vocational training, and research all form part of the complex function of a university.

Intellectual Culture

Intellectual culture is certainly of fundamental importance. For, as Newman observes, "a cultivated intellect, because it is good in itself, brings with it a power and a grace to every work and occupation which it undertakes." How may it be achieved? It is not, in itself, a branch of knowledge but rather a healthy state of mind which can be developed only by study in some appropriate field. As Newman remarks:

"In saying that law or medicine is not the end of a university course, I do not mean to imply that the university does not teach law or medicine. What indeed can it teach at all, if it does not teach something particular?"

This at once raises the question of what subjects and courses of study fall within the province of a university. The vice-chancellor of Queen's University, Dr. Eric Ashby (1946), has suggested the following answer:

"If the subject lends itself to disinterested thinking; if generalization can be extracted from it; if it can be advanced by research; if, in brief, it breeds ideas in mind, then the subject is appropriate for a university. If, on the other hand, the subject borrows all its principles from an older study (as journalism does from literature, or salesmanship from psychology, or massage from anatomy and physiology), and does not lend itself to generalization, then the subject is not a proper one for a university. Let it be taught somewhere by all means . . . but it is a technique, not an exercise for maintaining intellectual health; and the place for a technique is a Technical College."

This answer is good so far as it goes, but it rather suggests that we may divide all conceivable subjects of study into two clearly defined categories—those which are technical, and those which, for want of a better word, may be called cultural. This is a dangerous fallacy and one to which academic people are liable; it might well be called, in Francis Bacon's terminology, an Idol of the Quadrangle. A more accurate view is expressed by Professor Montrose (1952), also from Queen's University, who distinguishes three levels of education which he calls technical, specialist, and general:

"*Technical education* may be briefly described as indoctrination. It does not consist in the mere imparting of factual information, for theories may be taught and skills practised, while ability to apply knowledge to particular situations may also be required. . . . But the understanding is limited, since acceptance of existing doctrine is assumed. The student submits to learning; he does not master it by developing a real understanding which comes from a creative and critical approach.

"*Specialist education* embraces technical education but proceeds to a higher level. It introduces the critical and creative approach by making the student aware of the problem character of the discipline and of the strength and fallibility of human solutions and problems, and also by inspiring him with the ideal of seeking for better solutions.

"*General education* embraces specialist study but takes it to the higher level appropriate to universities by making the specialist aware of the broad topics and general methods of other disciplines. Without specialist study there is no penetration to the heart of the subject, no travelling to its periphery where its relation to other subjects may be appreciated; without general education the process required by the specialist approach itself is halted. There are broad problems and general methods common to many disciplines, and progress in each is best assured by awareness that solutions of particular problems in each may be suggested or even elaborated in some other discipline."

Professor Montrose's thesis does not differ essentially from that presented two years ago by Sir Harold Himsworth in a stimulating address on the University and Medicine in which he stated that the real difference between education and technical training is one of aim and purpose. Himsworth made the further very important point that all education has its basis in technology.

"Custom," he said "has habituated us to the euphemism that learning the techniques of reading, writing, and mathematics, and acquiring a knowledge of foreign languages, are educative processes. But education in the higher sense, the development of power to form judgments, only becomes possible after such techniques have been acquired. It can, therefore, be conceded at once that a modicum of detailed and technical knowledge is an indispensable foundation for higher education, be this classical or scientific. But . . . this modicum must be such as to form the basis for the development of a representative selection of intellectual skills" (Himsworth 1951).

Admittedly with some subjects it is almost impossible to get above the technical level; in many others, however, the level reached depends rather on the teacher and the student than on the subject itself. It has been abundantly proved that a study of the Classics can be a potent means of intellectual cultivation, but that is not the only way. The study of history, philosophy, modern languages, and literature, and (dare I add?) mathematics,

* Inaugural lecture in the chair of surgery, University of Otago medical school, New Zealand, 1953.

physics, chemistry, and biology may be no less effective. Moreover it is well to remember that the study of any subject, including the so-called humanities, if wrongly conducted, can be a stultifying experience. Byron's *Thoughts Suggested by a College Examination* are a pertinent reminder:

> "Happy the youth in Euclid's axioms tried
> Though little versed in any art beside;
> Who, scarcely skill'd an English line to pen,
> Scans Attic metres with a critic's ken. . . .
>
> Though marvelling at the name of Magna Carta,
> Yet well he recollects the laws of Sparta;
> Can tell what edicts sage Lycurgus made,
> While Blackstone's on the shelf neglected laid;
> Of Grecian dramas vaunts the deathless fame,
> Of Avon's bard remembering scarce the name.
>
> Such is the youth, whose scientific pate
> Class-honours, medals, fellowships await."

Vocational Training

Today, with the almost complete disappearance of the leisured class, the demand for vocational training is greater than ever before. In many vocations the essential qualification is the ability to perform certain clearly defined tasks and to react correctly to stock situations; for these training at technical level is sufficient. There are other vocations, however, exemplified by the so-called learned professions, for which purely technical training is hopelessly inadequate. These demand, in addition to specialised knowledge and special skills, educated minds capable of dealing with new and complex situations. It seems self-evident that recruits for these professions need both a university education and a period of professional apprenticeship; the real point at issue is the extent to which university studies should relate to specific professional requirements. My own view is that professional training can be of great vocational value and is by no means incompatible with Newman's concept of the university's function. Moreover, if professional training and university education are divorced, the former will almost inevitably be conducted at a purely technical level, and the latter is likely to be superficial or even perfunctory. I therefore hold that the practice, which has been followed since the Middle Ages and which Newman himself accepted as proper, of the universities assuming a large measure of responsibility for training recruits for some at least of the professions is sound, and indeed essential, provided always that the objectives we have been discussing are kept clearly in view. If this plan is adhered to a period of apprenticeship is still necessary, but it can be effectively integrated with the early training; and in some instances, as in Medicine, it may begin before graduation.

The objection may be raised that the universities' hands are tied because, to an ever-increasing extent, entry into the professions is being controlled by bodies such as the Law Society and the General Medical Council, which prescribe courses of training and either conduct, or in large measure control, qualifying examinations.

It is certainly conceivable that this might give rise to difficulty; in fact, however, it does not appear to have done so. Certainly, so far as the profession of medicine is concerned—and this is the only profession for which I can speak—the General Medical Council in Britain, and corresponding bodies in the Dominions, have done an enormous amount to raise professional standards without exerting any harmful influence on the universities.

Research

The search for truth is complementary to the other functions of a university. Not only is the cultivated intellect of vital importance in this search; the pursuit of any scientific discipline is a potent means of promoting intellectual growth and of developing that imaginative insight which, as Whitehead (1932) has emphasised, is the hallmark of the educated man.

The search must be free and unfettered by considerations of expediency. This claim is often defended on the ground that a discovery which does not appear to have any immediate application often proves later to be of great practical importance, but this is begging the question. I believe, as anyone undertaking fundamental research must believe, as an article of faith, that truth is worth pursuing for its own sake. It is natural, and indeed salutary, to have periods of doubt about this, and it is comforting to find that scientists of the stature of Sir Macfarlane Burnet have experienced such doubts (Burnet 1948), but we must overcome them.

At the same time we must avoid the opposite mistake of despising research of an ad-hoc kind. Short-term application is certainly not essential, but to refuse to consider the impact of discoveries on the professions and in industry or, worse still, to avoid deliberately problems which seem likely to have a short-term application is surely academic affectation of a most objectionable kind. Happy indeed is the man whose work combines the possibility of fundamental discovery with the solution of immediate problems, for he easily avoids both these errors.

The Place of Surgery in the University

We are now in a position to consider the place of surgery in the university. It will be convenient to arrange the discussion under three main headings: undergraduate education, postgraduate training, and research.

UNDERGRADUATE EDUCATION

The medical student begins by studying the basic sciences of physics, chemistry, and biology; he then goes on to study the structure and function of the human body. After three years, while still an undergraduate, he becomes an apprentice, and is brought into contact with men, women, and children ill in mind or body. He begins to learn something of the value, and the limitations, of the scientific method applied to the study of disease; and at the same time he is introduced to the human and social problems occasioned by birth, growth, old age, disease, and death.

It is hard to imagine a more enriching experience, or a field of study better calculated to bridge the widening gap between the humanities and the sciences. Why, then, is the level of general education attained by the average student so disappointingly low? I believe that the explanation lies not in the nature of the subjects taught, nor in the calibre of the students, but in our teaching.

In the first place, we have been too much swayed by demands from various sections of the profession to teach this or that because it will be important in practice. Our object should not be to produce general practitioners, or surgeons, or pathologists, or research-workers, but graduates who are totipotent, being capable of differentiating during the postgraduate phase of their apprenticeship in various ways according to their individual abilities, inclinations, and opportunities.

Secondly, we teach too many facts. There are so many subjects that few if any are studied deeply, cramming is almost inevitable, and the student has little time to think for himself.

Thirdly, insufficient effort is made to help students with the difficult intellectual and psychological adjustments necessitated by the transition from preclinical to clinical work.

The position cannot be improved by introducing more so-called cultural subjects. The right approach is to prune, and to set each subject in proper perspective by asking ourselves how much a student can reasonably be expected to learn about it, what contribution it can make towards general education, and how it should be taught.

Let us try to answer these questions as regards surgery.

How much Surgery should a Student be Expected to Learn?

In my own university it was customary to publish in the calendar a syllabus for each subject in which degree examinations were held. Under *Surgery* one found the alarming pronouncement that *the syllabus includes the whole subject.* Fortunately our teachers were too wise to treat this seriously, or our state would indeed have been parlous. In contrast it is sometimes suggested that, since only a small proportion of students are going to be surgeons, and then only after years of postgraduate training, there is no need to teach surgery at all.

Most surgeons, and most teachers, would reject both these extremes: the first because the surest way of teaching too little is to try to teach too much; the second because, as I have already tried to show, it is based on a misconception of the nature and purpose of medical education. There is, however, much difference of opinion regarding the precise direction we should take.

My own view is that when a student sits for his qualifying examination he should have learnt to take an accurate history and to conduct a proper physical examination, and should be able to diagnose common surgical disorders, especially those requiring prompt treatment. In cases where he is unable to make a precise diagnosis he should know when and where to seek expert advice. Finally, he should be familiar with the principles underlying the treatment of patients before, during, and after operation, and should have a general idea of the scope and the limitations of present-day surgery.

Even this modest goal is not always reached. But, if the teaching of medicine and surgery are properly coördinated, and if both are based on a firm foundation of anatomy, physiology, and pathology, it should be well within the reach of every student who does his work in the wards and the outpatient department conscientiously.

What Contribution can the Study of Surgery make towards a Student's General Education?

In the first place, it is not difficult to relate the study of surgery to that of other subjects. The most obvious links are with other clinical subjects and with the biological sciences, but there are many more. Contact with patients inevitably introduces psychological problems; and experience of suffering, even if vicarious, raises issues of profound metaphysical and theological import. These issues form the subject of an immense amount of literature, in which the student may browse at will; his main difficulty is to know where to begin. And if yet more links are required, one may consider the history of surgery, or the effect of surgical progress on the history of mankind.

Secondly, surgery provides excellent opportunities for training students to make accurate observations. And it is, I believe, all to the good that in many cases observations of crucial importance have to be made with the unaided senses.

Thirdly, the student learns to draw reasonable inferences from his observations. His capacity for logical thinking grows, and he develops a capacity for making sound intuitive judgments when logic can carry him no further. It is important for him to learn to distinguish between these processes, and to determine by introspection how he has reached a given conclusion. This naturally raises questions of an epistemological character, and the student who wants to pursue them can be introduced to Locke, Hume, Kant, Russell, Whitehead, and the rest.

Finally, the student learns to make up his mind. Of course the ultimate decision about what treatment to advise rests with the surgeon in charge of the case, but it is, I think, essential for the student to decide what he would do if the responsibility were his. It is far better for him to make mistakes than to remain for ever a prey to indecision. In surgery, more often than in medicine, important decisions have to be made quickly, and it is perhaps this fact, more than anything else, which gives to the study of surgery its distinctive character.

How should the Teaching of Surgery at Undergraduate Level be Organised?

Lectures, lecture-demonstrations, and bedside instruction are all of value, but I am wholeheartedly in agreement with Mr. David Patey when he says that the pivot on which the whole British system of clinical instruction turns is association of the undergraduate with the work of the various clinical units in an active responsible capacity. This requires a high ratio of patients to students and a curriculum which leaves plenty of free time for ward work (Patey 1952).

This system was developed in the days of honorary hospital staffs. Today almost everyone is paid, but it is still possible, and in my view essential, for much clinical teaching and supervision to remain the responsibility of men engaged in the hurly-burly of private consultant practice. To keep a proper balance, however, and to achieve continuity between preclinical and clinical work, this responsibility should, I believe, be shared with men who are full-time members of the staff of a university. Such men must be competent surgeons, and they must therefore be actively engaged in surgical work; in addition, however, they must be interested in education in the widest sense of the word.

My distinguished predecessor has suggested that it is nowadays impossible to be a professor of surgery, because the field is so vast that no-one can compass it; he therefore favours the title "director of clinical studies." Mr. Patey, too, appears to be of the same opinion. With great respect I disagree; for what is needed is not merely someone to coördinate clinical teaching but also someone to bridge the gap between hospital and university, someone able to speak in the university on behalf of the profession and to foster in the hospital the ideals of the university. Exhaustive knowledge is fortunately not necessary; if it were, there would be no professors not only of surgery but also of mathematics, physics, history, philosophy, and every other subject worthy of a university.

POSTGRADUATE TRAINING

The main responsibility for maintaining professional standards in surgery rests with the Royal Colleges. It is therefore in my view both right and inevitable—though it is sometimes deplored in university circles—that the colleges should to a large extent determine the pattern of postgraduate training, and should conduct examinations. It is also right and inevitable that the medical graduate who wants to become a surgeon should spend some years in hospital posts, working first under close supervision and later enjoying a measure of responsibility commensurate with his ability and experience.

There is room, however, for fruitful collaboration between the colleges, the hospitals, and the universities, and it would be a tragedy if this were not maintained.

In the first place, as the colleges have wisely recognised, a surgeon needs a more thorough knowledge of anatomy, physiology, and pathology than he obtained as an undergraduate; and the universities can cater for this need.

Secondly, it is, or should be, of great advantage for trainees, especially those who hope to join the staff of a teaching hospital whether in a full-time or a part-time capacity, to spend part of their postgraduate apprenticeship in a university surgical unit. As a general rule this should, I believe, be a unit which is responsible for undergraduate teaching, partly because the opportunity to teach also at postgraduate level is a great stimulus to members of the unit, and partly because it is good for the trainee to do some teaching himself.

What of courses of instruction in surgery? I cannot speak from experience because I have never attended,

let alone conducted, a formal course of postgraduate instruction, but I have an uneasy feeling that such courses are often regarded by fellowship candidates merely as short-cuts which will help them to pass their examination. If this danger can be avoided, a well-planned course may be of real value, but no amount of formal instruction is an adequate substitute for practical experience.

RESEARCH

A surgeon may undertake research with the object of advancing his own subject by developing new methods of diagnosis and treatment. Alternatively, he may seize the opportunities which often arise in surgical practice of making new discoveries in anatomy, physiology, or pathology.

In both types of research close liaison between the wards and the laboratory is of fundamental importance. Indeed all the really great advances in surgery—such as the control of infection by antisepsis, asepsis, chemotherapy, and antibiotics; the use of blood-transfusion and the discovery of accurate methods for controlling fluid and electrolyte balance; and the development of appropriate operations for treating lesions of almost every part of the body—have been brought about by combined clinical and laboratory research or by the clinical application of laboratory discoveries. So swiftly has discovery followed discovery, however, that today a gap—one might almost say an iron curtain—has developed between the clinician and the laboratory worker, and each finds the language of the other almost incomprehensible.

This gap can be bridged only by men with an interest in, and preferably first-hand experience of, both fields. Such men are rare and, perhaps on that account, often considered eccentric. They are, however, in the authentic Hunterian tradition, for John Hunter—let us never forget—was both a surgeon and an experimental biologist. It is, I believe, one of the important duties of a university clinical unit to guard this tradition and to provide an environment in which those who seek to follow it can flourish.

Summary

What I have tried to show may be summarised quite briefly. It is, firstly, that surgery as a subject is a proper one for university study; and, secondly, that surgery as a profession needs men and women with knowledge and skill, and with that breadth of outlook which can come from university education at its highest level.

I gratefully acknowledge the permission of the authors, and the respective publisher or editor, to quote the words of Dr. Ashby, Professor Montrose, and Sir Harold Himsworth.

REFERENCES

Ashby, E. (1946) Challenge to Education. Sydney; p. 81.
Burnet, F. M. (1948) *Med. J. Aust.* ii, 284.
Himsworth, H. P. (1951) *Lancet*, ii, 743.
Moberly, W. (1949) The Crisis in the University. London.
Montrose, J. L. (1952) *Universities Rev.* **25**, 20.
Newman, J. H. (1852) The Idea of a University. London.
Ortega y Gasset (1946) Mission of the University. London; p. 44.
Patey, D. H. (1952) *Proc. R. Soc. Med.* **45**, 25.
Whitehead, A. N. (1932) The Aims of Education. London; p. 139.

"... The welfare state has emerged by an evolutionary process in the sphere of social affairs but without sufficient education (or propaganda) to take the people along with all its implications. ... The general attitude is unfortunately that of *taking* out of the national pool and putting nothing back. ... There are obviously circumstances where only the resources of the State can provide complicated treatment or care over a long period for gross abnormality of physical or mental health. Even here, as suggested earlier, more could be done to help parents to accept responsibility for home care, encouraging them to overcome their trouble by living with it instead of passing it on to someone and somewhere else. Put this way and remembering that 'it' is a child in trouble the rôle of the State should be more clearly that of a friendly adviser rather than providing a plain van to take difficulties away."—ALAN MONCRIEFF. *Child Health and the State.* London, 1953; p. 45.

THE SUPRAPUBIC CATHETER

A METHOD OF TREATING URINARY RETENTION

C. G. SCORER
M.B. Camb., F.R.C.S., F.R.C.S.E.
CONSULTANT SURGEON, HILLINGDON HOSPITAL, MIDDLESEX

PUNCTURE of the distended bladder through the abdominal wall has many advantages but has always been regarded as dangerous. If the puncturing instrument enters the peritoneal cavity it may damage the bowel or the omentum, while leakage of urine along its track may give rise to prevesical extravasation of urine and spreading cellulitis. Either of these complications may be fatal.

In 1943 Riches described a method of treating urinary retention caused by injuries to the spinal cord. He devised an instrument by which a small rubber catheter could be inserted into the bladder by a stab through the skin and linea alba. In 1949 he advocated the same technique for chronic urinary retention due to prostatic obstruction, but gave no details.

During the past three years this method of suprapubic catheter drainage has been used in almost all types of urinary retention coming under our care, whether due to acute or chronic obstruction or paralysis. This paper contains a review of 150 consecutive cases.

The Urethral Catheter

From time immemorial the relief of urinary obstruction has been by the passage of a urethral catheter. If urine fails to make its way along the natural channel, it is rational to reopen the passage by the use of a curved and hollow tube. Such, indeed, was the treatment until the end of the 19th century, when, through the work of McGill of Leeds and Freyer of London, suprapubic removal of obstructing tissue became an established and successful operation. Thereafter, as the technique of prostatectomy became surer and safer, the catheter was used less and less. Its use is still necessary before operation when urinary retention is present, and it is essential after operation while the bladder and prostatic capsule are healing.

But the urethral catheter can be a troublesome instrument. It cannot with certainty be retained in the urethra of a restless and mentally confused patient; it is recognised as the prime source of infection of the urinary tract, with all the serious or disastrous consequences; it is a cause of irritation and discomfort to the patient, and on occasion it is very difficult, if not impossible, to pass.

Some say that the catheter should not in any circumstances be used before operation, and that the correct way to treat urinary retention is to relieve the obstruction forthwith. This surely is a counsel of perfection. It presupposes a fully equipped urological unit capable of giving a twenty-four-hour service including radiology and if need be biochemistry. At present it can be achieved only by the few. Secondly, and more important, it assumes that all such patients admitted to hospital are fit for major surgery. In our experience this is far from true.

The use of the suprapubic catheter to relieve urinary retention obviates to a large extent the difficulties inherent in the urethral catheter: it is safe; the technique is simple; and the patient suffers only the slightest disturbance. At any time subsequently the patient can undergo an operation to relieve the obstruction; or, should he be considered permanently unfit for a major surgical operation, the catheter can be retained or a larger one substituted.

Technique of Puncture

On admission to the ward the patient is examined and, if he is in pain, morphine is given. The catheter

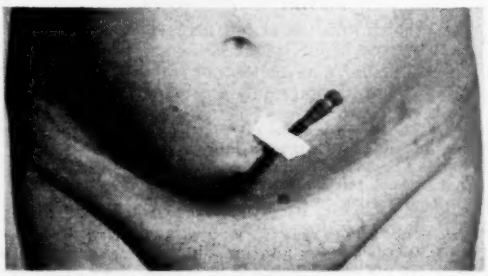


Fig. 1—Urinary retention treated by suprapubic catheterisation in patient aged 75. Wound is 3 in. above symphysis pubis.

is then introduced under local anæsthesia with the patient in his bed in the ward. Several points need emphasis.

To define the size and outline of the bladder, percussion, the customary method, is unreliable. In acute retention the circumference of the tense bladder can easily be felt after the protective spasm of the abdominal muscles has been relaxed with morphine. In chronic or paralytic retention the bladder is often larger, and no difficulty has been experienced in palpating its outline. A point on the skin is then chosen 1 inch below the level at which the anterior surface of the bladder curves backwards to the superior. It has, however, not been found to be of any value to have the site of entry more than about 3 inches above the pubes (fig. 1).

The question may fairly be asked how often is the peritoneum penetrated or bowel or omentum damaged?

Anatomically the procedure appears to be safe. Rogers (1952) describes the peritoneal reflection on the anterior surface of the bladder in the following words:

"When the fundus of the bladder is 2 inches above the pubes the peritoneal reflection is probably not more than $^3/_4$ inch above the same bone. When the fundus of the bladder is midway between the umbilicus and the pubes there may be 2 inches of the anterior abdominal wall in the middle line and immediately above the symphysis devoid of peritoneal lining. Thus it happens that the distended viscus may be readily tapped above the pubes without the peritoneum being wounded."

This suggests that, when the bladder is enlarged up to, or almost up to, the umbilicus, as in almost all our cases, some 3 inches or more of bladder is free from peritoneal covering above the symphysis pubis.

But experience is more eloquent. In 150 cases no complication has arisen by damage to peritoneal contents. Moreover, 89 of these cases were treated by house-surgeons whose experience in operating was negligible and to whom the technique had been demonstrated but once or twice.

In some cases at operation or at necropsy it has been found that the lowest fold of peritoneum, consisting of two apposed surfaces lying on the distended anterior bladder wall, has been perforated. The significance of this will be discussed later.

When the catheter is being introduced, it has proved necessary not only to make a small vertical incision in the skin $^1/_4$–$^1/_2$ inch in length but also to cut through the strong fibrous tissue of the linea alba to the same extent. If this is not done, the catheter may be torn from the instrument while it is being introduced.

Position of Catheter

After the catheter on its introducer has been carried past the linea alba on to the bladder surface, a short sharp stab is made, with due warning to the patient that he will feel momentary pain or discomfort. A boring movement must not be used, for it tends to drag the catheter off the introducer or to dissect the layers of the bladder wall one from another, so increasing the likelihood of bleeding.

With the catheter in the bladder, the introducer is removed and the advancer inserted. The catheter is then pushed onward to the bottom of the bladder at a point just behind the trigone (fig. 2). This is an important step. The catheter should be well down; otherwise, when the bladder contracts on emptying (fig. 3), the open end may be drawn up to, or out of, the wall with consequent likelihood of a leak of urine into the prevesical tissues.

A 'Nylon' stitch is used to secure the catheter to the skin, and this is reinforced with adhesive strapping. We have learnt that in a restless patient the shield devised and illustrated by Riches is insufficient to hold the catheter in position.

In several cases the track of the catheter has been dissected when prostatectomy was performed, or at necropsy. After traversing the abdominal wall at right angles to the skin-surface the catheter passes through the prevesical fat to a point on the anterior aspect of the bladder which varies with the degree of its distension. When the bladder is empty, the catheter enters below the level of the top of the symphysis pubis (fig 3). If the bladder is filled, its wall slides up the catheter, reducing the length of its extravesical course and increasing the length which remains inside the bladder.

Extravesical Leak of Fluid

Of the 150 cases in this review, some degree of urinary leak outside the bladder has been noted in only 2. In

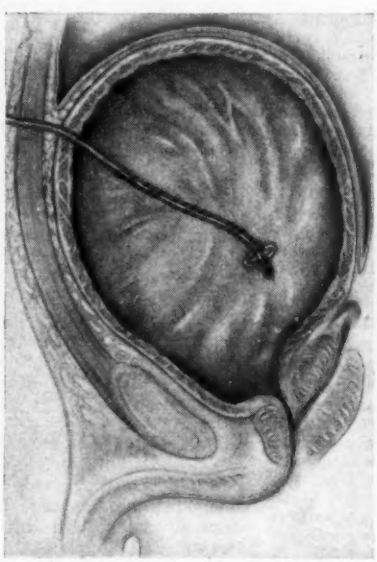


Fig. 2—Suprapubic catheter in distended bladder.

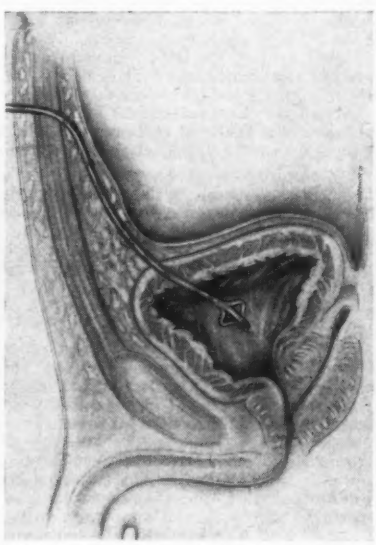


Fig. 3—Suprapubic catheter in contracted bladder.

the first the abdominal wall was dissected in the way described for the standard operation of suprapubic cystostomy; leakage took place because the hole into the bladder was too large. In the second the catheter was apparently pulled almost out of the bladder. In each case the tissues were œdematous and difficult to handle when prostatectomy was done, and adequate exposure of the bladder was much impeded.

No case of extensive urinary extravasation or of spreading cellulitis has been seen, but a little prevesical œdema is sometimes found.

Choice of Patient

Since Sept. 1, 1949, suprapubic catheterisation has been used with increasing confidence and frequency. Between this date and January, 1953, 233 cases of acute or chronic urinary retention have come under our care. 150 were treated by suprapubic catheterisation, while 83 were treated by other methods or did not require treatment:

	No. of cases
Indwelling urethral catheter	58
Relieved spontaneously	10
Immediate prostatectomy	5
Moribund, no treatment	4
Dilatation of stricture	3
Immediate suprapubic cystostomy	2
Cystodiathermy of papilloma	1
	83

The group treated by urethral catheterisation was largely composed of three types of case: (1) those admitted to, or developing retention in, another ward in the hospital; (2) those known or suspected to have carcinoma of the prostate; and (3) those in whom some local anatomical reason precluded the use of the suprapubic catheter.

As our experience has increased, the urethral catheter has been used less. There are, nevertheless, certain cases in which its continued use is advisable or essential:

(1) When a young patient develops urinary retention during an attack of pneumonia or congestive heart-failure, and the disease is not serious enough to keep him in bed more than a few days, it is better to use a urethral catheter. This turn of events is not uncommon. An indwelling urethral catheter is tied in, but removed as soon as the patient can get out of bed and walk. Normal micturition then returns.

On the other hand, some of our most rewarding cases have been in older men desperately ill in a medical ward whose retention has been relieved by suprapubic catheterisation and who, some four or six weeks later, have been fit enough for prostatectomy.

When the bladder has to be drained for a long time the use of a urethral catheter too readily leads to infection; we prefer to resort to suprapubic drainage.

(2) Suprapubic catheterisation has hitherto been thought inadvisable in patients with prostatic carcinoma. Many such patients respond well to œstrogens with or without a short period of urethral catheterisation. Others require endoscopic resection. Our fear has been that in cases of carcinoma, suprapubic drainage of the distended bladder may lead to a permanent fistula, but it is probably unfounded. We have not seen any case of fistula, and the wound usually closes with astonishing rapidity.

(3) Where there is no free access to the anterior bladder wall, or where the tissues are infected, suprapubic catheterisation should not be used. For instance, when the peritoneal cavity has been drained suprapubically for peritonitis, the scar may prevent the peritoneal fold from rising with the bladder as it distends. This is usually obvious on palpation. The bladder lies away from the abdominal wall, and the scar acts as a warning. As an example of infection, a man was admitted with retention of urine and a cellulitis of the lower abdominal wall. A urethral catheter was used. He was subsequently found to have a breaking-down vesical carcinoma.

Results of Treatment

After the initial relief of urinary obstruction the patient's general condition is assessed and further investigations are made. The disposal of 150 cases after preliminary treatment by suprapubic catheterisation was:

	No. of cases
Prostatectomy	87
Urethral dilatation for stricture	5
Suprapubic cystostomy	23
Relieved without further treatment	12
Died without further treatment	23
	150

A few words of explanation must be said about each group.

PROSTATECTOMY

When prostatectomy is to be performed the diagnosis is confirmed by cystoscopy immediately before the operation. If a suprapubic rather than a urethral catheter has been used, the urethra will be uninfected and the bladder base will not have been irritated by an indwelling catheter. No traumatic or infective œdema will obscure the field, and the state of the trigone and surrounding tissues can be readily judged.

If prostatectomy is indicated, the suprapubic catheter is removed and the operation of choice is done. A midline incision is made from the site of entry of the catheter to the symphysis pubis. No attempt is made to search for and to close the hole in the bladder through which the catheter passed; this has been found to be unnecessary.

In retropubic prostatectomy the approach is unimpaired. If a transvesical operation is performed, the bladder may be contracted and difficult to distend in the same way as it is after long-continued drainage by urethral catheter. But this is by no means invariable, even when the catheter has been in for several weeks.

The choice of operation is in part a matter of personal preference and experience. The type of prostatectomy done was as follows:

	No. of cases
Retropubic enucleation	55
Transvesical enucleation	25
Endoscopic resection	7
	87

A retropubic operation was usually chosen for the fit active men, and the transvesical approach with suprapubic drainage for the old and frail. It was, of course, in the latter that prolonged catheter drainage was necessary. The perurethral method was used in cases of carcinoma or where prostatic enlargement was slight.

The length of time the suprapubic catheter was retained before operation is shown in the accompanying table.

Catheter retained (days)	Retropubic enucleation	Transvesical enucleation	Endoscopic resection	Total
1–5	28	7	2	37
6–10	22	6	1	29
11–15	2	4	..	6
16–20	1	1	1	3
21 or more	2	7	3	12
	55	25	7	87

URETHRAL DILATATION

This was done in the operating-theatre as soon as a stricture was diagnosed. The suprapubic catheter was then spigoted, and the patient instructed to pass his urine in the normal way. The catheter was removed forty-eight hours later; urine seldom leaked, and then only in the first few hours.

SUPRAPUBIC CYSTOTOMY

In the early days this operation was performed either when it was clear that prostatectomy never could be done—e.g., in a patient already suffering from gastric carcinoma—or where fitness for operation was improbable within a month. With experience, however, we have found fewer indications for its use. It is in itself almost as serious as a quick enucleation of the prostate, and of our 23 patients 8 died within a few days of the operation.

In addition, the suprapubic catheter can be retained for several months and provides quite adequate bladder drainage. After two or three weeks the original catheter may be superseded by a straight soft rubber urethral catheter as described by Riches; it is inserted immediately after removal of the first. We have found it advisable to keep the patient in hospital during this waiting period. There still remain a few patients who, because they refuse operation, or because an interval of two or three months is deemed advisable, will return home with the large de Pezzer catheter for bladder drainage.

RELIEVED WITHOUT FURTHER TREATMENT

In this group are those patients with negligible prostatic enlargement or congestion who need no surgical relief. Cystoscopy establishes the diagnosis, and thereafter the suprapubic catheter is spigoted and normal micturition returns.

There were 2 cases of paralytic distension: in one, tabes dorsalis was diagnosed after the retention had been relieved; in the other, paraplegia was caused by a tumour of the spinal cord. In both cases normal micturition was regained after treatment of the primary disorder.

DIED WITHOUT FURTHER TREATMENT

The figure of 23 may well be considered large, but analysis shows that in most of them urinary retention was merely an incident in the life of a patient already ill or dying from a serious medical disorder. The relief of retention was essential for the patient's comfort, but continued decline was inevitable.

It is in such cases that the suprapubic catheter is a boon. It is easily inserted, and when in position it causes the patient no discomfort. It can be retained indefinitely, and seldom needs attention apart from periodic changing. In our experience it is far less often pulled out than an indwelling urethral catheter.

In 16 of the 23 cases the primary cause of death was unrelated to the urinary condition, as follows: heart-failure (4 cases), pneumonia (4), cerebral hæmorrhage (3), pulmonary tuberculosis (2), paraplegia (2, caries and secondary carcinoma), and pulmonary embolus (1). All these patients died within a month of admission.

2 patients died from uræmia, one within forty-eight hours of admission (blood-urea 254 mg. per 100 ml.), and the other, after a fortnight, with a blood-urea level which never fell below 400 mg. per 100 ml.

Of the remaining 5 fatal cases some incident relating to catheterisation may be considered partly responsible for death. In 1 patient, aged 85, a urethral catheter was repeatedly pulled out, and he died from pyelonephritis two days after suprapubic catheterisation; the suprapubic catheter should have been used on admission. In 2 others, aged 76 and 83, the suprapubic catheter came out after they had been sent home. Both died from pyelonephritis after retention of urine had recurred; neither should have gone home at that stage. In a 4th, aged 67, the catheter was reinserted by a male nurse who failed to reach the bladder; peritonitis followed. More precise details are not known, but it is clear that the reinsertion of a suprapubic catheter is a skilled task and must be done at once. In the last, a man aged 74, already in uræmia (blood-urea 169 mg. per 100 ml.) died from pyelonephritis because of blocking of the catheter, which was not adequately cleared.

Complications of Suprapubic Catheterisation

In the present series complications have been remarkably few, and all can be overcome.

Displacement of the catheter is the commonest; through inadequate methods of tying in, the catheter slips out. If this happens and urinary retention has recurred, the catheter may be reinserted by the same technique as was used for its first introduction. If the accident is recognised as soon as it has happened, a urethral catheter can be inserted down the track and into the bladder without difficulty. If the track cannot be found, a urethral catheter must be used rather than allow retention to recur with the possibility of an ascending urinary infection.

Epididymo-orchitis has been seen once. This was in a patient whose prostatectomy was delayed because of severe acute asthma and bronchitis. During his convalescence his catheter was spigoted and he was encouraged to try to pass urine normally. A bilateral infection ensued.

Urinary extravasation has been seen in 2 cases, as mentioned above, and is explained by a technical error in introducing or managing the catheter. There has been no case of spreading cellulitis or prevesical suppuration, even where the catheter had to be reintroduced after slipping out.

Peritoneal perforation is known to occur occasionally (we have seen it on 6 occasions); but, provided the outline of the bladder is carefully determined before the catheter is introduced, no trouble arises from damage to bowel or to omentum (a complication which we have not seen). The fact that a portion of the catheter passes through the peritoneal cavity appears to be of no significance; though of course it is undesirable that it should do so. If the bladder can be felt lying against the anterior abdominal wall introduction of a suprapubic catheter is safe.

Hæmorrhage to a mild degree usually follows introduction of the catheter; occasionally it is moderate. No retention of urine was observed, but a clot 2 inches in diameter was found in the bladder of a man who died from bronchiectasis and bronchopneumonia. Retained clot should be evacuated by cystoscope and suction.

Conclusions

Suprapubic catheterisation for treatment of acute and chronic urinary retention has been tried in 150 cases. It has proved safe and simple. Minor modifications have been made in the technique first described by Riches.

It has definite advantages over the urethral catheter. It is more comfortable, because the patient can get out of bed and walk about, remaining up all day. Infective complications are reduced and there is no urethritis. It does not interfere with the subsequent treatment of obstruction of the bladder neck or of the urethra by whatever technique is considered desirable. Cystoscopy is made easier and more accurate. Finally, the opinion of the ward sister and nurses is convincing—the patients are more contented and easier to nurse.

Thanks must be accorded to Mr. H. G. Hanley, in whose unit and under whose inspiration this work was done. It would have been impossible without the coöperation of a succession of enthusiastic and able house-surgeons. I am grateful also to Mrs. Freda Wadsworth for her drawings, and Mr. E. Stride, A.I.M.P., for the photograph.

REFERENCES

Riches, E. W. (1943) *Lancet*, ii, 128.
— (1949) *Brit. med. J.* i, 887.
Rogers, L. C. (1952) Treves's Surgical Applied Anatomy. 12th ed., London; p. 414.

ICTERUS OF THE BRAIN IN THE NEWBORN

A. E. CLAIREAUX
M.D. Edin., M.R.C.P.E.
PATHOLOGIST

P. G. COLE
A.I.M.L.T.
BIOCHEMISTRY TECHNICIAN

G. H. LATHE
M.D., Ph.D. McGill
BIOCHEMIST

From the Institute of Obstetrics and Gynæcology, Hammersmith Hospital, and Bernhard Baron Memorial Research Laboratories, Queen Charlotte's Maternity Hospital, London

YELLOW pigmentation of the brain is a striking complication in some cases of neonatal jaundice. Although this pigmentation is not always confined to the nuclear masses, the term kernicterus or nuclear jaundice seems to be applied to any type of brain jaundice in which the nuclei are chiefly involved.

The experience of one of us (Claireaux 1950) seemed to suggest that the condition was invariably associated with icterus gravis neonatorum resulting from hæmolytic disease. Similarly, Potter (1952) stated that she had never observed icterus of the brain complicating conditions other than erythroblastosis. Nevertheless the work of Aidin et al. (1950), Zuelzer and Mudgett (1950), and Govan and Scott (1953) showed that nuclear jaundice was not uncommonly found in infants in whom the effects of rhesus iso-immunisation could be excluded. Indeed, Aidin et al. remarked that, far from being the only cause of nuclear jaundice, hæmolytic disease was not even the commonest; they found nuclear jaundice in 16·6% of premature infants who came to necropsy.

For this reason we have inquired into the incidence of both types of icterus of the brain in 376 necropsies of liveborn infants at Queen Charlotte's Maternity Hospital and Hammersmith Hospital during the five years 1948–52.

A further problem of great importance is the nature of the pigment responsible for the yellow staining of the brain. The suggestion has been made (Pickles 1949, Küster and Krings 1950) that this pigment may be the cause of brain damage. Dereymaeker (1949) found that the staining reactions and solubilities of this pigment were those of bilirubin. However, the assertion of Schmorl (1904) that staining was due to an abnormal pigment has been renewed by Bevis (1952b), who states that the pigment is mesobilifuscin arising from an underlying metabolic disorder.

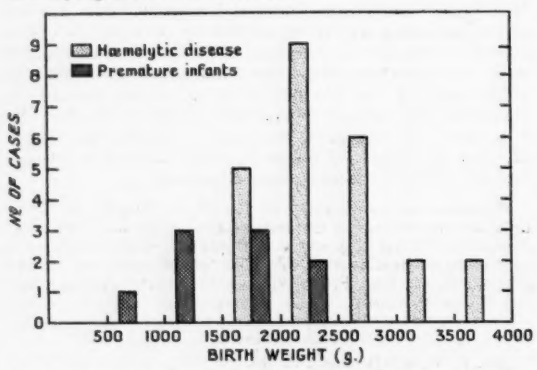


Fig. 1—Distribution of birth weights among 9 babies with brain icterus associated with prematurity and 24 babies with brain icterus associated with hæmolytic disease.

As a preliminary step in the investigation of the brain pigment Cole and Lathe (1953) have described a chromatographic method of fractionating bile pigments. This method has now been applied to the study of the brain pigments in four cases of icterus of the brain, and to the examination of the serum pigments to which the brain is exposed in hæmolytic disease of the newborn.

INCIDENCE OF BRAIN JAUNDICE

During 1948–52 at Queen Charlotte's Maternity Hospital and at the Institute of Obstetrics and Gynæcology, Hammersmith Hospital, there were 376 necropsies of liveborn infants. Among these there were 33 cases of brain jaundice (8·8%). Of these 33 cases 24 (73%) showed evidence of rhesus iso-immunisation; the remaining 9 were all premature infants in whom no evidence of rhesus incompatibility was found. Of the 24 cases of hæmolytic disease 13 were males and 11 females; of the 9 other cases 6 were males and 3 females.

MATURITY OF INFANTS

The birth weight of the infants with hæmolytic disease was partly determined by the fact that pregnancy was

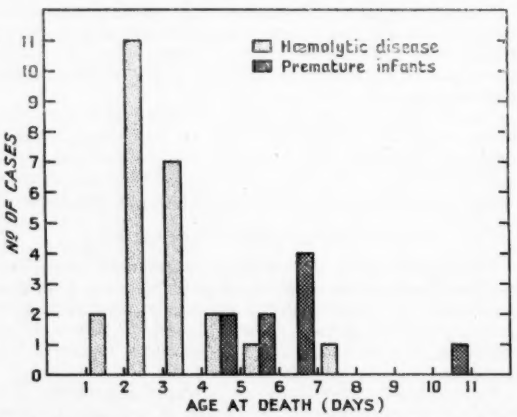


Fig. 2—Distribution of age at death among 9 babies with brain icterus associated with prematurity and 24 babies with brain icterus associated with hæmolytic disease.

terminated spontaneously or electively in all but 3 cases, most of them at 36–38 weeks' gestation. One pair of affected twins of 34 weeks' gestation is included. The distribution of the birth weights of this group of infants is shown in fig. 1.

The other group of infants were all premature with birth weights well under 2500 g. (fig. 1). One infant weighing 640 g. was delivered spontaneously at 26 weeks. There were three twins in this group. Their partners had also been jaundiced after birth but recovered.

TIME OF DEATH

There was a striking difference between the two groups. The infants with hæmolytic disease seldom survived more than four days, but no infant of the premature group died before the fifth day (fig. 2).

CLINICAL FEATURES IN THE INFANT

All the infants with hæmolytic disease were rhesus-positive and gave a positive Coombs test. The hæmoglobin level of the blood varied from 24% to 140% (Haldane). Red blood-cells varied from 1,900,000 to 5,500,000 per c.mm. All the infants had moderate to severe jaundice which appeared within the first two days. The liver and spleen were enlarged in 11 cases, the spleen alone in 8 cases, and in the remaining 5 no enlargement was found. In 12 cases an exchange

blood-transfusion was given, and in 3 cases a simple direct blood-transfusion was given. In 1 case an exchange transfusion was attempted but failed. In the remaining 8 cases no transfusion was given. In these 8 cases the hæmoglobin level was well over 100% and varied from 107 to 140% (Haldane).

4 of the 9 premature infants were rhesus-positive and 1 was rhesus-negative; in 4 no information is available. The Coombs test was negative in all 9 infants. The depth of jaundice varied considerably. There was 1 case of hepatosplenomegaly; 1 infant had gastric and pulmonary hæmorrhage; 1 was deeply jaundiced and developed peritonitis as a result of perforation of the ileum after an ileocæcal intussusception; 1 developed bronchopneumonia; and the remaining 5 showed no unusual features apart from jaundice. There were thus only 2 cases related to infection.

CLINICAL FEATURES IN THE MOTHER

None of the 23 mothers of the infants with hæmolytic disease was a primipara; 10 of them were in their second pregnancy, and 8 in their third. In 13 cases the pregnancy was terminated at the 36th–38th week because of hæmolytic disease; this was done by artificial rupture of the membranes in 10 cases and by elective cæsarean section in 3 cases. Spontaneous labour took place at term in 2 cases, at the 42nd week in 1, and before the 38th week in 7. All the pregnancies had been uneventful. In the 1 pregnancy which produced twins and terminated spontaneously at 34 weeks both twins were affected. All 23 mothers were rhesus-negative and had antibodies in their serum.

Of the 9 mothers of the premature infants 5 were primiparæ: 2 of them bore twins at 32 weeks' gestation, and 1 of these infants had acute hydramnios; 1 had a severe antepartum hæmorrhage at the 32nd week and was delivered by cæsarean section; and 2 had uneventful pregnancies. Of the 4 mothers who had previously borne children 1 had a twin pregnancy complicated by hydramnios; 1 had a slight antepartum hæmorrhage from a lateral placenta prævia; 1 had an uneventful pregnancy which was suddenly terminated at 26 weeks by the spontaneous onset of labour; and 1 had an uneventful pregnancy which terminated spontaneously at 32 weeks. 7 of the mothers were rhesus-positive, and none had antibodies in her serum. The incidence of abnormalities during pregnancy in this group was not higher than would be expected in any series of premature deliveries.

Pigment in the Brain

The distribution of pigment in the brain was somewhat variable, and no distinction could be made between the two groups of cases. In 6 infants with hæmolytic disease and in 2 premature infants there was general diffuse yellow staining of the brain in addition to the nuclear pigmentation. In 2 infants the periventricular white matter in the cerebrum was stained, and in 1 the periaqueductal tissue was yellow. In the remainder various nuclear structures were involved.

CASE-SUMMARIES

The pigment responsible for colouring the affected areas of the brain was extracted in 4 cases: 2 in infants with hæmolytic disease, and 2 in premature infants. The clinical and pathological findings in these cases were as follows:

Case 1.—Male. Birth weight 2722 g. Spontaneous vertex delivery at 37 weeks. The mother, a 5-para aged 25, was rhesus-negative with antibodies. The infant was rhesus-positive, and the Coombs test was positive. The blood hæmoglobin was 107% (Haldane). Four days after delivery the baby developed head retraction and grunting respiration. He died at the age of 5 days.

Necropsy showed jaundice, hepatosplenomegaly, intrapulmonary hæmorrhage, and pale-yellow staining of the basal ganglia, olives, and medullary nuclei.

Summary.—Icterus gravis neonatorum with nuclear jaundice.

Case 2.—Male. Birth weight 2326 g. Spontaneous breech delivery at 34 weeks. The mother, a unipara aged 29, was rhesus-negative with antibodies. The infant was rhesus-positive, and the Coombs test was positive. The blood hæmoglobin was 24% (Haldane). An exchange transfusion was given, but the infant's condition steadily deteriorated and he died at the age of 50 hours.

Necropsy showed intense jaundice, hepatosplenomegaly, intrapulmonary hæmorrhage, and diffuse yellow staining of the whole cerebral parenchyma and intense jaundice of the basal ganglia, corpus Luysii, cornu ammonis, and flocculus of the cerebellum.

Summary.—Icterus gravis neonatorum with diffuse cerebral icterus and nuclear jaundice.

Case 3.—Male. Birth weight 1892 g. Spontaneous vertex delivery at 34 weeks. The mother, aged 19, was a primipara. The infant was jaundiced after twenty-four hours but otherwise seemed well until the fifth day, when he vomited, collapsed suddenly with twitching movements, and died. His blood belonged to group A and was rhesus-positive; Coombs test negative.

Necropsy showed a deeply jaundiced premature infant, with no lesion in chest or abdomen, and with deep-yellow staining of the periventricular white matter, basal ganglia, cornu ammonis, vermis and flocculus of cerebellum, inferior olives, nuclei in the pons, and nuclei in the floor of the 4th ventricle.

Summary.—Premature infant with severe nuclear jaundice.

Case 4.—Male. Birth weight 640 g. Spontaneous delivery following sudden onset of labour at 26 weeks. The mother was a unipara aged 33. The infant was pale at birth, and a gradually deepening jaundice developed. A few convulsions were noted on the second day. The child died at the age of 7 days.

Necropsy showed an extremely premature jaundiced infant, with yellow staining in the periventricular white matter, thalami, cornu ammonis, mid-brain nuclei, nuclei in the floor of the 4th ventricle and medulla, and the inferior olives.

Summary.—Prematurity with nuclear jaundice.

BIOCHEMICAL METHODS

The following methods were used:

Brain pigments were extracted by homogenising the tissue in five volumes of 'Analar' methyl alcohol. The mixture was allowed to stand at room-temperature for two to four hours, and a clear supernatant fluid was obtained by centrifuging. This was stored at −12°C, and a small amount of fine white precipitate which formed was filtered off.

For the isolation of pigments from serum 0·18 vol. of saturated ammonium sulphate was added, with mixing, followed by 2·5 vol. of absolute ethanol. The turbid mixture stood for half an hour at room-temperature before being centrifuged. The clear supernatant fluid was decanted and stored at −12°C.

The quantitative van den Bergh estimation was done in the usual way by adding to sera, or tissue extract, one-half volume of freshly diazotised sulphanilic acid, and then three volumes of alcohol. The depth of colour was estimated in a photo-electric colorimeter.

Pigments from brain and serum were examined by the method of Cole and Lathe (1953) using reverse-phase chromatography on silicone-treated kieselguhr and the solvent phases formed from 25 vol. chloroform, 25 vol. carbon tetrachloride, 38 vol. methyl alcohol, and 12 vol. 0·025M phosphate buffer. It was found convenient to use 6 g. of kieselguhr in glass tubes of 1·6 cm. internal diameter and 3 ml. of stationary phase. The fractionation procedures reported here were all done under comparable conditions, and the results recorded as sketches of the chromatogram columns, showing the bands of pigment after 15 ml. of the mobile phase had come off the column. The columns of brain extract represented 4 g. of brain, and those of serum were equivalent to 1·5 ml.

EXAMINATION OF PIGMENTS

Each of the four brains was treated in the same way, but only that of case 2 is described in detail, because only minor quantitative differences between the four specimens were observed. When the brain was sectioned at necropsy, the deeply stained nuclear areas (9 g.) were

separated from the remainder of the brain (205 g.). The intensely stained, circumscribed, areas probably amounted to less than 10% of the total "nuclear" fraction, because it was impossible to avoid including much unstained material with it. The pigments were extracted from both parts of the brain—i.e., the separated "nuclei" and the "remainder." The total amount of diazo reacting material was equivalent to 2 mg. of bilirubin per 100 g. of the "nuclei" and 0·5 mg. per 100 g. in the "remainder." Presumably the concentration of pigment was from five to ten times as great in the small pigmented patches.

Portions of the extract were taken to dryness in vacuo, and run on to reverse-phase chromatograms in the mobile phase. After 15 ml. of solvent had run through the column, the position and size of the pigment bands from the extracts of the stained "nuclei" and of the "remainder" were noted and sketched (fig. 3*a* and *b* respectively). Each chromatogram showed two yellow bands, the upper slowly moving band being substantially larger and much more intensely stained than the lower fast-moving band. In this respect the same general pattern was observed in both chromatograms, but a difference was observed in the size and tint of the upper band, which was wider and more deeply coloured on the chromatogram of the nuclear fraction.

As an aid in identifying these bands 50 μg. of bilirubin was run on another chromatography column under the same conditions, producing the result shown in fig. 3*c*. The bilirubin took up a position intermediate between the two bands from icteric brain. However, when bilirubin was added to an extract of this brain, and the combined material was run on a column, the result (fig. 3*d*) was similar to that of the nuclear extract (fig. 3*a*), the bilirubin moving with the slow upper band, which it intensified.

It was concluded that on the chromatogram the predominant pigment of brain icterus behaves identically with bilirubin in the presence of brain extract.

To determine their van den Bergh reactions the pigments were eluted from the chromatography columns. They gave positive diazo reactions, that of the upper band being much stronger than that of the lower band. This was in agreement with the relative depth of yellow.

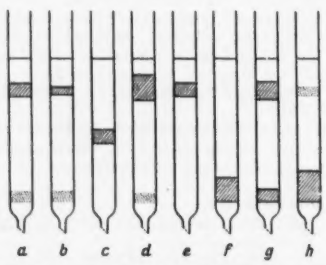


Fig. 3—Appearance of standard chromatography columns:

a, extract of "nuclear" portion of icteric brain, showing prominent slowly moving upper band of indirect-reacting pigment, and faint lower band of fast-moving direct-reacting pigment.
b, extract of "remainder" of icteric brain.
c, standard of bilirubin.
d, bilirubin added to "nuclear" portion of icteric brain.
e, bilirubin added to extract of normal brain.
f, direct-reacting bile pigment added to extract of normal brain.
g, extract of serum removed during exchange transfusion of infant with hæmolytic disease, showing greater proportion of lower fast-moving direct-reacting pigment than in icteric brain (*a*).
h, extract of serum from surviving jaundiced infant without hæmolytic disease, showing great predominance of lower fast-moving direct-reacting pigment.

For comparison, extracts were made of the brains of two babies who died of rhesus incompatibility at the ages of 3 and 15 hours. There was no visible staining of the brain tissue. The bile pigments in the serum of one of these babies were equivalent to 6·3 mg. of bilirubin per 100 ml. The colour of the brain extracts confirmed the lack of tissue staining. The brains of five stillborn babies were also examined without finding any significant amount of pigment.

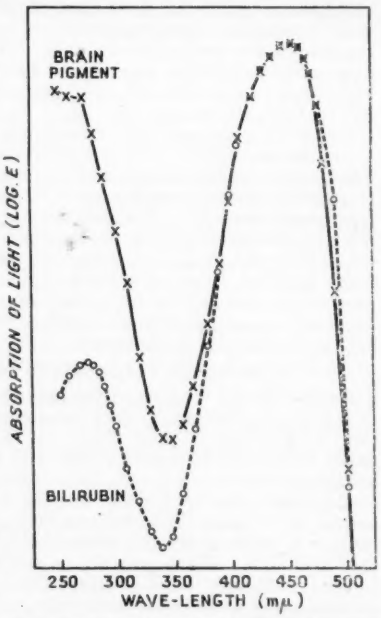


Fig. 4—Ultraviolet and visible spectrum absorption curves of standard bilirubin and of brain pigment.

Visual and Ultraviolet Absorption Curves

The character of the pigment present in brain icterus was pursued further by studying its absorption curve. This was examined in the solvent as it came off the partition column. For comparison under identical conditions a standard of bilirubin was also run through a column. In fig. 4 the curves of the two pigments are compared. They are almost identical throughout the visible range (400–510 mμ), but in the ultraviolet range they differ, the brain pigment having a noticeably greater absorption. This ultraviolet absorption, in excess of that of bilirubin, has also been observed when bilirubin has been put on the chromatogram with normal unstained serum extract, and in fact the corresponding eluates of serum alone absorb in this region. Accordingly this difference from bilirubin may be attributed to the materials which are eluted from the column with bilirubin. In other respects the absorption characteristics of the brain pigment are those of bilirubin, and they share identical peaks at 454 mμ.

Pigments in Serum

Since staining of the brain takes place only when there is an excess of pigments in the serum, it may be assumed that the brain pigments have their immediate origin in the blood-stream. Hence it seemed important to obtain information about the types of pigment to which the blood-brain barrier is exposed. In erythroblastosis fœtalis it is possible to examine these pigments in the blood removed at exchange transfusion, and this was done in 9 cases by the same techniques as were applied to brain extracts. It would have been preferable to compare brain pigments and serum pigments from the same patients; but in recent months only 1 patient undergoing exchange transfusions has died, and no brain icterus was present in this instance.

The chromatographic examination of the 9 serum specimens from exchange transfusions revealed that the upper slowly moving pigment, which is bilirubin, predominated in 8 cases, but there was a considerable

variation in the amount of the lower fast-moving bile pigment, which reacts directly in the van den Bergh test. In one of the exchange-transfusion sera this latter pigment was present in larger amounts than was bilirubin, and in several cases appreciable quantities were present (fig. 3*g*). Since this difference in pigment composition between brain and serum suggested a selective concentration of bilirubin in the pigmented areas of brain, other evidence of discrimination between these pigments was looked for in tissue extracts.

The sera of jaundiced newborn babies do not all show the same proportion of pigments as was found in the blood removed by exchange transfusions. In particular the fast-moving direct-reacting bile pigment may be far more abundant. Recently we have seen 3 jaundiced newborn infants of this type, all having greatly increased amounts of bile pigments in the serum (one had 50 mg. per 100 ml.); but bilirubin was responsible for only a minor part of this increase, as a chromatogram of serum extract showed (fig. 3*h*). These babies survived.

Bilirubin-retaining Lipid

An observation that appeared to throw some light on the staining of brain tissue was the slowing of the bilirubin band on the column when an extract of icteric brain was run simultaneously (fig. 3*d*). The same effect was demonstrable with extract of unstained brain (fig. 3*e*) and with extracts of serum. Since these chromatograms are partition columns, the retardation of bilirubin must be due to either a relative increase in the volume of the stationary phase or to an increased concentration in this phase. The first possibility was excluded by examining the effect of brain extract on the movement of bilirubin and an eosin dye. Without brain extract they move at an almost identical rate. In its presence, however, bilirubin is held back without the movement of the eosin being affected. There is thus some specificity in the affinity of brain extract for bilirubin.

Whether the fast-moving direct-reacting bile pigment of serum would be retarded was next determined. Some of this pigment was obtained from the serum of an adult with obstructive jaundice and was added to an extract of brain. Its rate of movement on the column (fig. 3*f*) showed that the bilirubin-retaining material had no affinity for the direct-reacting bile pigment.

It was of some interest to see whether there were greater amounts of this bilirubin-retaining material in pigmented than unpigmented brains, and more in "nuclear" areas than the "remainder." No differences were found, but this might be due to the method of estimation, which is only semiquantitative, and to the difficulty of getting predominantly nuclear materials for study. From the position of the bilirubin-retaining material on the columns a lipid character may be inferred, but large amounts of brain lecithin, cephalin, cerebroside, cholesterol, and neutral fat were inactive.

DISCUSSION

In this survey of cases from two hospitals it was found that jaundice of the brain occurred in about 1 per 1000 live births and in almost 9% of neonatal deaths. There are certain pronounced differences between the two groups of infants who show icterus of the brain. The first group is associated with hæmolytic disease of the newborn; the affected infants are usually mature, unless the pregnancy has been deliberately interrupted because of the hæmolytic disease. Their mothers are almost invariably multiparous since they most commonly develop iso-immunisation as the result of a previous pregnancy. The infants may be jaundiced at birth or develop jaundice shortly afterwards. The greatest mortality is on the third day.

By contrast the patient in the second group of cases is usually a premature infant. There is no evidence of rhesus iso-immunisation in the mother; most of the mothers in our series were rhesus-positive. The mothers are often primiparæ, as this series shows, since previous sensitisation is apparently not essential to the development of the lesion in this group. The greatest mortality in this group is on the seventh day.

In spite of these pronounced differences in the pathogenesis of icterus of the brain in the two groups of patients the general distribution of the pigment in the brain does not appear to differ from one group to the other.

The brain pigment from 4 newborn infants representing both types of case has been examined. From a study of the diazo reaction, the chromatographic behaviour, and the absorption spectrum we conclude that the brain pigment of each type of case is bilirubin.

Schmorl (1904) is sometimes cited as saying that the pigmentation in brain icterus was not due to bilirubin, and a similar argument has been advanced by Pickles (1949). It must be recalled that at the turn of the century little was known of the different bile pigments, and as a result Schmorl spoke of jaundice being due to "bile pigment." He observed that the organs of newborn infants affected with nuclear jaundice remained yellow when preserved in formalin, whereas the organs from other cases of neonatal jaundice turned green. He concluded from this that the nuclear pigmentation was not due to "bile pigment." However, evidence that "bile pigment" was more complex was introduced a few years later by van den Bergh and Muller (1916), who noted that some icteric sera gave a direct diazo reaction and others gave an indirect reaction. These pigments have been separated by Cole and Lathe (1953), and it is clear now that the direct-reacting pigment, which moves fast on a chromatographic column, and predominates in obstructive jaundice, is not bilirubin. The indirect-reacting pigment, characteristic of hæmolytic jaundice, moves slowly on a column and is bilirubin. It has been known for a long time (van den Bergh 1918, Andrewes 1924) that the direct-reacting bile pigment is particularly easily oxidised to green derivatives, whereas the indirect-reacting pigment, now known to be bilirubin, is more stable. Thus, in the light of our present knowledge, Schmorl's original observations are in keeping with the identification of the brain pigment as bilirubin.

The claims of Bevis (1952a) that the yellow-brown pigment of liquor amnii is mesobilifuscin and (Bevis 1952b) that this is also the pigment of icteric brain are difficult to assess without experimental evidence. In unpublished experiments we have fractionated samples of liquor amnii from patients with hæmolytic disease and found not one but several pigments. Unfortunately a specimen of mesobilifuscin has not been available for chromatographic comparison with the pigments from liquor amnii or for absorption studies in relation to brain pigment. The absorption spectrum of mesobilifuscin (Meldolesi et al. 1939) bears little resemblance to that of bilirubin. Moreover the nature of mesobilifuscin is very obscure, five types having been described by Siedel et al. (1948). These workers, who have been largely responsible for the studies of bilifuscins, state that mesobilifuscin does not give a diazo reaction (Siedel and Möller 1939). Unlike Bevis (1952b) we have found that the brain pigment reacts positively, as does bilirubin.

In contrast to the brain extracts, in which bilirubin greatly predominated, extracts of serum from other cases of hæmolytic disease had a larger proportion of the direct-reacting bile pigment. Thus the brain seems to have a selective attraction for bilirubin. This possibility is supported by the demonstration that brain tissue contains a bilirubin-retaining lipid, and that this material has no affinity for the direct-reacting bile pigment.

It is clear that the occurrence of extreme jaundice and of greatly increased quantities of bile pigments in the

serum is not in itself necessarily damaging to the neonatal brain. This is illustrated by the three newborn infants in whose serum the levels of total bile pigments were very high (up to 50 mg. per 100 ml. according to the diazo reaction). However, the amount of bile pigment present in the form of bilirubin was relatively small (fig. 3*h*). From the survival of these babies it may be assumed that the direct-reacting pigment did not affect the brain. In a similar way it is possible to explain the anomaly that icterus of the brain does not appear in the more pronounced jaundice of adult patients with obstruction or in congenital atresia of the bile-ducts in the newborn. In these conditions the main pigment to which the brain is exposed is not bilirubin but the direct-reacting bile pigment.

Thus the relative absence of the direct-reacting bile pigment from icteric brain, together with the absence of brain icterus in clinical jaundice due to this pigment, serves to direct attention to the rôle of bilirubin in the production of brain icterus. It follows, too, that the conversion of bilirubin to the direct-reacting pigment tends to protect the neonatal brain from icterus. There is much evidence from other sources that this change is made by the liver, and reduced liver function may contribute to the development of brain icterus in both types of case. Indeed, a defect of this conversion may be the primary factor leading to the brain icterus of premature babies, in whom no increased production of bilirubin has yet been demonstrated. This would be consistent with the longer survival of the premature baby than of the baby with hæmolytic disease.

These studies emphasise the crucial importance of bilirubin in the development of brain jaundice. It now seems to be necessary to determine whether a high level of bilirubin has a direct toxic effect, or whether some additional factor—e.g., cell damage, and altered permeability of the blood-brain barrier—is a prerequisite for the development of icterus of the neonatal brain.

Summary

The incidence of brain jaundice in neonatal infants in two large maternity hospitals has been determined.

About a quarter of the cases are associated with prematurity and clearly distinguished from the rest, which are associated with hæmolytic disease.

The differences between these two groups of cases have been analysed.

The pigment responsible for the staining has been extracted from the brains of two infants in each group. The pigment of icteric brain in the premature infants is identical with that in the infants with hæmolytic disease. It is bilirubin. A bilirubin-retaining lipid has been shown to be present in the brain.

Direct-reacting bile pigment is largely absent from the icteric brains but is present in various amounts in the serum of babies with hæmolytic disease. This pigment is not concentrated by the bilirubin-retaining lipid of brain in vitro, and it does not stain the brain tissue.

Emphasis is laid on the rôles of bilirubin and of the liver, which may protect the brain of the newborn infant by converting bilirubin to direct-reacting pigment.

We wish to acknowledge the help that has come from many discussions with our clinical and laboratory associates, especially Dr. John Murray. We are grateful to Prof. J. H. Dible, of the Postgraduate Medical School of London, and Prof. J. McClure Brown, of the Institute of Obstetrics and Gynæcology, Hammersmith Hospital, for access to clinical and pathological records and material.

REFERENCES

Aidin, R., Corner, B., Tovey, G. (1950) *Lancet*, i, 1153.
Andrewes, C. H. (1924) *Brit. J. exp. Path.* **5**, 213.
Bevis, D. C. A. (1952a) *Lancet*, i, 395.
— (1952b) *J. Obstet. Gynæc., Brit. Emp.* **59**, 857.
Claireaux, A. E. (1950) *Arch. Dis. Childh.* **25**, 61.
Cole, P. G., Lathe, G. H. (1953) *J. clin. Path.* **6**, 99.

References continued at foot of next column

YEASTS IN THE VAGINAL FLORA
THEIR INCIDENCE AND IMPORTANCE

SYLVIA M. DAWKINS
M.B. Lond.
MEDICAL OFFICER, FAMILY PLANNING ASSOCIATION CLINICS; CLINICAL ASSISTANT, CONTRACEPTIVE CLINIC, OBSTETRIC UNIT, UNIVERSITY COLLEGE HOSPITAL, LONDON

JOAN M. B. EDWARDS
M.B. Lond.
BACTERIOLOGIST, CENTRAL PUBLIC HEALTH LABORATORIES, COLINDALE, LONDON

R. W. RIDDELL
M.D. Lond., F.R.C.P.E.
SENIOR LECTURER IN MEDICAL MYCOLOGY, INSTITUTE OF DERMATOLOGY, LONDON

THRUSH of the vagina and vulva, caused by the yeast-like fungus *Candida albicans*, is well known; but lesser degrees of vulvovaginitis due to this organism are probably inadequately recognised. Investigations into the significance of vaginal yeasts have not been made in Britain, and surveys made elsewhere have often been uncritical. For these reasons we have assessed the incidence and significance of vaginal yeasts in patients attending four family-planning clinics in North London and Hertfordshire.

Material and Methods

500 patients were examined. All were attending the clinics for the first time, but 56 had attended a similar clinic on previous occasions and were regular users of a contraceptive diaphragm. New registrations included in the trial, on any one day, could not exceed 6, because of the extra time required for questioning and for taking specimens. New patients attending these clinics never exceeded 10 in an evening and were often fewer than 6. Postnatal clinics and general practitioners referred 192 patients, for instruction in birth-control for medical reasons not pertaining to disease of the urogenital tract; the remaining 308 patients attended of their own initiative. None of the patients was known to be subfertile, and of the 476 married ones 388 were parous. Their ages ranged from 17 to 45 years. The patients therefore comprised a selected section of the population, although they included representatives from all five of the Registrar-General's social classes (General Register Office 1951).

One person took all the histories and made all the clinical observations throughout the investigations. Mimeographed sheets were used for recording personal and medical histories, clinical observations, and laboratory findings. The laboratory work was done without knowledge of the clinical findings. The data from these sheets were transferred to punch-cards for analysis.

HISTORY

Each patient was asked the same questions. The routine clinic questions dealt with general health and gynæcological, obstetrical, marital, and contraceptive

DR. CLAIREAUX AND OTHERS: REFERENCES—*continued*

Dereymaeker, A. (1949) *Acta neurol. belg.* **49**, 939.
Govan, A. D. T., Scott, J. M. (1953) *Lancet*, i, 611.
Küster, F., Krings, H. (1950) *Ibid*, i, 979.
Meldolesi, G., Siedel, W., Möller, H. (1939) *Hoppe-Seyl. Z.* **259**, 137.
Pickles, M. M. (1949) Hæmolytic Disease of the Newborn. Oxford; p. 114.
Potter, E. L. (1952) Pathology of the Fetus and the Newborn. Chicago and London; p. 406.
Schmorl, G. (1904) *Verh. disch. path. Ges.* **6**, 109.
Siedel, W., Möller, H. (1939) *Hoppe-Seyl. Z.* **259**, 113.
— Stich, W., Eisenreich, F. (1948) *Naturwissenschaften*, **10**, 316.
van den Bergh, A. A. H. (1918) Der Gallenfarbstoff im Blute. Leiden.
— Muller, P. (1916) *Biochem. Z.* **77**, 90.
Zuelzer, W. W., Mudgett, R. T. (1950) *Pediatrics*, **6**, 452.

histories. Most patients did not volunteer information about gynæcological symptoms; so it was necessary to elicit them by direct questioning. Questions concerning pruritus vulvæ were the following:

(1) Have you ever had itching?
(2) Was this during pregnancy?
(3) Have you had itching during the last month, and is it present now?

Pruritus was recorded as mild unless the patient emphasised its severity. It was recorded as "present now," if the answer to either of questions (3) was "Yes." Parous patients were asked whether oral thrush had occurred in their children; other questions dealt with douching and intravaginal tampons.

CLINICAL SIGNS

These were recorded as soon as the patient had been examined and the laboratory material obtained. The presence or absence of vulval and vaginal inflammation was noted. The quantity of secretion or discharge was assessed as profuse, moderate, or scanty. "Moderate" and "scanty" were considered to be within normal limits, but "profuse" was regarded as pathological. Its appearance was described as mucous, mucopurulent, curdy, or bloodstained. The patient's description of the discharge was also recorded but bore little relation to our observations. For a clinical diagnosis of thrush the criteria were vaginitis and patchy, white, curdy, and rather adherent discharge, sometimes extending to the vulva and cervix. Cervicitis, erosion, and ectropion were recorded, with a diagram.

COLLECTION OF LABORATORY MATERIALS

500 vulval and a similar number of vaginal swabs were examined. With the patient in the lithotomy position, a swab (previously soaked in Sabouraud's broth) was swept over the outer and inner surfaces of the labia minora and round the introitus. A sterile Cusco's speculum, without lubricant, was next inserted, the cervix was exposed, and a second swab similarly soaked was passed round the outer surface of the cervix and into the posterior fornix. Finally, a pipette fitted with a rubber teat was inserted, and 1 ml. of sterile 0·85% saline solution was ejected into the fluid in the vaginal pool. After mixing, some of this fluid was aspirated. Premarital patients were occasionally advised, and in these cases, if the hymen was insufficiently dilated, the second swab was guided through a small sterile glass tube instead of through the speculum.

LABORATORY PROCEDURES

The aspirates from the vaginal pool were examined within three hours for the presence of *Trichomonas vaginalis*. Low-power microscopy was used on the whole area of two wet preparations of each sample. Since they could not be examined until morning the swabs for yeast investigation were stored overnight at 2°–5°C. Quarter-plates of Sabouraud's dextrose agar, gentian-violet bile-salt medium (Littman), and penicillin-streptomycin blood-agar (30 units of each antibiotic per ml. of medium) were inoculated from each swab. Finally, the swab was used to make as thick a smear as possible over a circular area of half-inch diameter on a slide. The smear was stained by Gram's method and examined for yeasts and pus cells before the results of culture were known. Each plate was incubated for forty-eight hours at 37°C, and the amount of yeast growth was recorded as 0, 1–50 colonies, +, ++, or +++. Throughout the survey the assessment of growth was made by one person. For identification a representative yeast colony was picked from each plate; where more than one type of colony was present each type was sampled. Bacterial contaminants were excluded by plating on blood-agar, and the yeast colonies were identified by the following cultural properties:

(1) The presence or absence of mycelium and chlamydospores, determined by deep streak culture in corn-meal agar incubated at 22°C for forty-eight hours. When no mycelium was produced in corn-meal agar, potato water was inoculated.
(2) The production of acid and gas in peptone water containing 2% glucose, maltose, sucrose, and lactose.
(3) The assimilation of carbohydrates (glucose, maltose, sucrose, lactose, and galactose) and nitrogenous compounds (ammonium sulphate, potassium nitrate, urea, and asparagine) by an auxanographic technique.
(4) The production of ascospores on carrot slopes.

Techniques for the differentiation of yeasts are fully described by Lodder and Kreger (1952), and a brief reference to the laboratory diagnosis of candida species is made by Riddell (1951). The production of chlamydospores is discussed by Gordon et al. (1952).

Results

INCIDENCE OF YEAST-LIKE FUNGI

Table I sets out the incidence of yeast-like fungi among the 57 patients from whom positive cultures were obtained. *C. albicans* was found in 38 of these; the other yeasts comprised at least five species. Most of the patients yielded positive cultures from both vulval and vaginal swabs, but 6 gave positives only from the vagina and 8 only from the vulva. Of these, 4 and 5 respectively yielded cultures of *C. albicans*.

TABLE I—YEAST-LIKE FUNGI IN VULVAL AND VAGINAL SWABS FROM 500 PATIENTS

Species	No. of patients
Candida:	
C. albicans	38*
C. krusei	3
C. tropicalis	3
C. parakrusei	1
C. mycoderma	1
Unclassified	3
Torulopsis (*Cryptococcus*):	
T. glabrata	7†
Unclassified	2
Total	57

* Including 6 cases of thrush.
† Including 1 patient also harbouring *C. albicans*.

In smear preparations various species of yeast were found to be indistinguishable, and the smear technique was shown to be useless as a guide to the presence of *C. albicans*. Although 9 swabs gave smears positive for yeasts which failed to grow in culture, smears indicated the presence of yeasts in only 66 of 102 swabs from which yeasts were ultimately grown.

Of the 54 swabs giving profuse cultures 51 showed yeasts in the smear, but the 48 swabs giving poor or moderate growths yielded only 15 positive smears (table II). For *C. albicans* alone similar figures were obtained: from 32 swabs giving profuse cultures positive smears were obtained in 29 instances; but 35 swabs which produced moderate or poor cultures gave positive smears in only 13.

Sabouraud's dextrose agar, as used in most laboratories, was as satisfactory for primary isolation of yeasts as the other two media used in this investigation.

TABLE II—COMPARISON OF CULTURES AND SMEARS FROM 1000 VULVAL AND VAGINAL SWABS

Species	Culture +++ and ++		Culture + and 1–50 colonies		Culture negative	
	No.	With positive smear	No.	With positive smear	No.	With positive smear
C. albicans	32	29	35	13	898	9
Other yeasts	22	22	13	2		
Total	54	51	48	15	898	9

TABLE III—RELATIONSHIP OF PRURITUS TO YEASTS

Pruritus	No. of cases	With *C. albicans*	With other yeasts
Severe	11	6	1*
Mild	72	7	5
Past history	139	8	5†
Absent	278	17	9
Total	500	38	20†‡

* *C. albicans* also isolated from this patient.
† Includes 1 patient in whom trichomonads were also present.
‡ Includes 1 patient from whom *C. albicans* was isolated.

OTHER FINDINGS

Thrush was seen in 6 patients, and in each case *C. albicans* was grown from both vulval and vaginal swabs. In 4 of these patients both swabs produced heavy growths, but in the other 2 only moderate growths developed. Yeasts were obvious in smears from 5 of these patients, but the 6th had scanty yeasts in the vulval smear and none in the vaginal one. In the presence of an active infection with *C. albicans* the greater reliability of culture technique is confirmed.

Pruritus.—Table III gives the incidence of pruritus and its relationship to the presence of *C. albicans*. A significant incidence of *C. albicans* was found only in relation to severe pruritus ($P<0.001$).

Vulvitis, Vaginitis, and Cervicitis.—Patients with vulvitis or with vaginitis harboured *C. albicans* significantly more often than patients without these signs ($P<0.001$), but there was no significant difference in the incidence of "other yeasts" (table IV). Of 107 patients with vulvitis or vaginitis 21 harboured yeasts, of which 18 were *C. albicans*. Of 393 patients without these signs 37 harboured yeasts, of which 20 were *C. albicans*. There was no significant relationship between cervicitis and the presence of any yeasts.

Vaginal Discharge.—50 patients had a profuse discharge. Thrush, present in 6 patients, was accompanied by profuse discharge in 3, and by moderate discharge in the other 3. There was a significantly higher incidence of *C. albicans* in patients with a profuse discharge than in those with moderate or scanty discharge ($P<0.05$) (table v). *C. albicans* accompanied a "curdy" discharge significantly more often than other yeasts ($P<0.01$).

Pus and Epithelial Cells in Smears.—The numbers of pus cells were not significantly related to the cultural isolation of any yeasts.

Duration of Marriage and of Parity.—No significant relationship to either of these factors was observed. 24 premarital women were examined; candida species were not isolated from any of them.

Douching and Intravaginal Tampons.—The incidence of *C. albicans* was significantly higher in patients who douched regularly than in those who did not ($P<0.05$); no relationship could be shown between the incidence of yeasts and the use of intravaginal tampons (table VI).

TABLE IV—RELATIONSHIP OF VULVITIS, VAGINITIS, AND CERVICITIS TO YEASTS

Group	No. of cases	With *C. albicans*	With other yeasts
Vulvitis and vaginitis :			
Vulvitis alone	44	6	0
Vaginitis alone	27	5	1
Vulvovaginitis	36	7	2*
Absent	393	20	17†
Total	500	38	20*†
Cervicitis :			
Severe	64	6	2
Mild	174	13	5†
Absent	262	19	13
Total	500	38	20†

* Includes 1 patient from whom *C. albicans* was isolated.
† Includes 1 patient in whom trichomonads were also present.

Thrush in Infants.—No correlation was found between the presence of *C. albicans* and a history of thrush in the last infant. The mothers' replies to direct questions were the only criteria of infantile thrush.

Social Status and Standard of Personal Hygiene.—No significant relationship was observed between these factors and the presence of yeasts.

Incidence of Trichomonads.—Trichomonads were found in the secretions of 9 patients, from 1 of whom a yeast (*C. tropicalis*) was grown. None of these complained of pruritus during the past month, and only 1 had a profuse discharge. There was, however, evidence of vulvovaginitis in 4 patients and of cervicitis in 3. None practised douching.

Discussion

The incidence of yeasts in the vulvæ and vaginæ of this group of non-pregnant women was 11·4% (10·3% if thrush is excluded). Figures of other investigators for similar groups range from 7·3% (Weinstein and Wickerham 1938) to 15% (Carter and Jones 1937, Plass et al. 1931). There is considerable evidence that yeasts occur more often in pregnant women, and figures for this group range from 25% (Weinstein and Wickerham 1938, Woodruff and Hesseltine 1938, Rauramo 1950) to 43% (Carter et al. 1940). The species isolated in this survey are similar to those in other reports. It is noteworthy that *C. stellatoidea*, the vaginal strain described by Jones and Martin (1938), was not found among the 102 cultures isolated. Rauramo (1950) also failed to isolate this organism from his cases. The incidence of *C. albicans* alone was 7·6% (6·5% if thrush is excluded). These figures are comparable with those obtained for similar groups by Negroni (1935) and Fisher and Arnold (1936). Their estimates of the incidence in pregnant women were three or four times as great.

TABLE V—RELATIONSHIP OF VAGINAL DISCHARGE TO YEASTS

Group	No. of cases	With *C. albicans*	With other yeasts
Vaginal discharge :			
Profuse	50	7	4*†
Moderate or scanty ..	450	31	16
Total	500	38	20*†
Vaginal exudate :			
Curdy	51	12	2
Not curdy	449	26	18
Total	500	38	20

* Includes 1 patient from whom *C. albicans* was isolated.
† Includes 1 patient in whom trichomonads were also present.

The infectivity of *C. albicans* (syn. *C. pinoyi* and *C. metalondinensis*) cultures inserted into the vaginæ of both pregnant and non-pregnant patients was shown by Hesseltine et al. (1934) and Bland et al. (1937), using other candida species for controls. Bland et al. showed that pruritus and increased discharge began twenty-four to ninety-six hours after inoculation. In the present study close associations were found between the presence of *C. albicans* on the one hand, and vulvovaginitis, discharge (both profuse and curdy), and severe pruritus on the other. However, 14 of the 38 patients harbouring *C. albicans* had neither signs nor symptoms. This suggests that infection may be completely latent, mildly inflammatory (with or without symptoms), or the cause of full clinical thrush with symptoms of variable severity. The response of the patient to the presence of *C. albicans* is governed by factors which are at present unknown.

TABLE VI—RELATIONSHIP OF DOUCHING AND INTRAVAGINAL TAMPONS TO YEASTS

Group	No. of cases	With *C. albicans*	With other yeasts
Douching :			
More than once monthly ..	60	10	0
Less than once monthly ..	67	7	0
Never	373	21	20
Total	500	38	20
Intravaginal tampons :			
Used	128	5	1
Not used	372	33	19
Total	500	38	20

Clinical assessment of purulent discharges was often misleading. Epithelial cells in smears from these often greatly exceeded pus cells in number, and the latter were sometimes absent. *C. albicans* did not tend to produce a predominantly leucocytic exudate.

Culture for *C. albicans* was positive in 6 of the 11 patients with severe pruritus, and all 6 showed profuse growth. Of 72 patients with mild pruritus only 4 (excluding 3 cases of thrush) grew *C. albicans*. Smears for pus cells and trichomonads did not indicate bacterial or protozoal infections. The lack of correlation between mild pruritus and isolation of this yeast could possibly be due to the technique of direct questioning. Very minor degrees of pruritus, caused by the mechanical effects of clothing or dried secretions, may thus have been included.

At Family Planning Association clinics, patients do not volunteer information about discharges or pruritus, and apparently very few had even consulted their general practitioners. It appears that minor discomfort is tolerated by many women without medical advice being sought.

This attitude in women with mild symptoms and minimal signs, and the complete absence of symptoms and signs in others harbouring *C. albicans*, may prevent the gynæcologist from taking special precautions, as he would do in a case of obvious thrush. If adequate aseptic techniques are not observed, the organism can clearly be transferred from patient to patient, and this hazard is considerably greater in the case of pregnant patients. Similar comments in respect of trichomonads have been made by Donald (1952). Where lack of other facilities necessitates reliance on antiseptics it must be remembered that *C. albicans* is resistant to some accepted bacterial antiseptics customarily used in many gynæcological clinics.

An interesting correlation exists between regular douching and the presence of *C. albicans*. The douching habit appears unrelated to the presence or absence of pruritus. Probably a predisposition to infection results from mechanical or chemical trauma and disturbance of the normal bacterial flora. Antibiotics are known to favour the growth of fungi by disturbing the balance of normal commensal bacteria, and it is conceivable that douching may do the same.

The results of laboratory diagnosis show three distinct facts :

(1) Only two-thirds of the yeasts found by culture may be *C. albicans*.

(2) Species of yeasts cannot be identified from smears or colonial appearance.

(3) Smears alone may show the presence of yeasts in only about two-thirds of patients whom culture shows to be harbouring *C. albicans*.

This survey shows that in clinically recognisable thrush both smears and cultures are positive. In such cases treatment would probably be started on clinical grounds alone. When cases of pruritus and leucorrhœa without frank thrush are being investigated, a smear or a single culture may be misleading. *C. albicans* may be reported when subsequent fermentation reactions would reveal some other species of yeast. If the gynæcologist suspects that a clinical abnormality is causally associated with the presence of *C. albicans*, the following procedure is suggested :

(1) Swabs of vulva and vagina should be cultured on Sabouraud's dextrose agar.

(2) Pure cultures of yeasts obtained should be examined for ability to ferment peptone water containing 2% of sugar (glucose, maltose, sucrose, and lactose). *C. albicans* ferments glucose and maltose, forming acid and gas, and sucrose, forming acid only. 2% sugar solutions are generally considered preferable, but the 1% solutions available in most laboratories may be used.

(3) Identification is completed by ascertaining the ability to produce chlamydospores. Some strains, however, do so with difficulty.

Animal-pathogenicity tests are unnecessary in routine work, since there is no reliable evidence of the existence of different degrees of experimental pathogenicity of strains of *C. albicans*.

Summary

An investigation was made to determine the incidence of vaginal yeast-like fungi in patients attending four family-planning clinics.

Yeasts were cultured from 57 of 500 patients. 38 of these patients harboured *Candida albicans* and the remainder at least 5 other species.

The superiority of cultural methods over the examination of smears is illustrated.

In the 6 cases of clinically recognisable thrush smears were all positive and *C. albicans* was cultured.

Patients with severe pruritus, vulvitis, vaginitis, or profuse and curdy discharge harboured *C. albicans* significantly more often than those without these symptoms and signs.

The incidence of *C. albicans* was also higher in those who douched regularly.

No significant relationship was found between the presence of yeasts and the social status or standard of personal hygiene of the patient, the duration of marriage, parity, a history of thrush in the last infant, the use of intravaginal tampons, or the presence of cervicitis.

The hazards of cross-infection by *C. albicans* are discussed.

Recommendations are made on laboratory diagnosis.

We wish to thank all those in clinics and laboratories who helped in this study. The statistical advice of Mr. B. Benjamin, of the General Register Office, is acknowledged with gratitude, as also is the technical assistance of Miss Y. M. Clayton, of the Institute of Dermatology.

REFERENCES

Bland, P. B., Rakoff, A. E., Pincus, I. J. (1937) *Arch. Derm. Syph., Chicago*, **36**, 760.
Carter, B., Jones, C. P. (1937) *Sth. med. J.* **30**, 298.
— — Ross, R. A., Thomas, W. L. (1940) *Amer. J. Obstet. Gynec.* **39**, 213.
Donald, I. (1952) *Brit. med. J.* ii, 1223.
Fisher, C. V., Arnold, L. (1936) *Univ. Ill. Bull.* **33**, 1.
General Register Office (1951) Classification of Occupations 1950. H.M.S.O.
Gordon, M. A., Bradley, E. G., Grant, V. Q. (1952) *J. Lab. clin. med.* **40**, 316.
Hesseltine, H. C., Borts, I.C., Plass, E. D. (1934) *Amer. J. Obstet. Gynec.* **27**, 112.
Jones, C. P., Martin, D. S. (1938) *Ibid*, **35**, 98.
Lodder, J. Kreger, N. J. W. (1952) The Yeasts. Amsterdam.
Negroni, P. (1935) *Rev. Inst. bact. Dep. nac. Hig., B. Aires*, **6**, 668.
Plass, E. D., Hesseltine, H. C., Borts, I.H. (1931) *Amer. J. Obstet. Gynec.* **21**, 320.
Rauramo, L. (1950) *Acta obstet. gynec. scand.* **30**, 484.
Riddell, R. W. (1951) *In* Recent Advances in Clinical Pathology. London ; chap. 5.
Weinstein, L., Wickerham, L. J. (1938) *Yale J. Biol. Med.* **10**, 553.
Woodruff, P. W., Hesseltine, H. C. (1938) *Amer. J. Obstet. Gynec.* **36**, 467.

HYDROCEPHALUS ASSOCIATED WITH DEFICIENCY OF VITAMIN A

J. W. MILLEN
M.A. Camb., M.D. Belf.
LECTURER IN ANATOMY, UNIVERSITY OF CAMBRIDGE

D. H. M. WOOLLAM
M.A., M.D. Camb., M.R.C.P.
LECTURER IN ANATOMY, UNIVERSITY OF CAMBRIDGE

G. E. LAMMING
Ph.D. Illinois, B.Sc. Lond., N.D.A.
MEMBER, AGRICULTURAL RESEARCH COUNCIL UNIT OF ANIMAL REPRODUCTION, CAMBRIDGE

ALTHOUGH many factors have been implicated in the production of hydrocephalus, it has not been reported previously that a deficiency of vitamin A in the mother may determine the development of hydrocephalus in her offspring.

The association of vitamin-A deficiency with xerophthalmia and changes in other epithelial tissues has long been recognised. Observations on laboratory and domestic animals have also provided data which indicate that lesions of the central nervous system may arise as a concomitant of vitamin-A depletion. Various explanations of these nervous lesions have been advanced. The most popular view appears to have been that put forward by Mellanby (1938), who claimed that overgrowth of bone is the factor that injures the nervous system. Unfortunately most of the experimental studies on the effect of vitamin-A deficiency have suffered from an incomplete examination of the central nervous system. The available information on the effects of vitamin-A deficiency in domestic animals is confined mainly to the symptoms and to examination of the peripheral nerves.

The present study arose from an investigation by one of us (G. E. L.) on the effect of subclinical vitamin-A deficiency on fertility and growth in a strain of inbred rabbits. It was noted that, in some of the young born to does deficient in vitamin A, symptoms of nervous disorder appeared at various times after birth. Radiological examination suggested that the underlying condition might be hydrocephalus, and this diagnosis proved to be correct.

Experiments and Methods

16 young rabbits, aged from two weeks to two months, were obtained from five different litters. In three litters all the young (5, 5, and 3) have been examined, in the other two litters surviving young, not yet showing symptoms, await further investigation. All 16 rabbits showed signs of lesions of the nervous system: 14 were killed in this investigation, and 2 others died from natural causes and were later examined.

3 of the does belonged to an inbred strain of stock rabbits and were mated to males of the same strain; 1 of the other 2 females was from the inbred strain but belonged to a line which had been separated out for colour some years previously; the remaining doe was an outbred animal and was mated with an outbred male, both of them being quite unrelated to the other strain.

All 5 does had received a diet which contained no detectable carotene (provitamin A) for fourteen weeks before mating. 1 received orally a small amount of vitamin A in arachis oil (150 µg. per kg. body-weight per week). No supplement of vitamin A was given to the young after weaning. The rabbits used as controls were progeny from similar does receiving the same diet with the addition of a supplement of vitamin A.

Attention was first drawn to the condition by the appearance of signs of nervous disorder and a curious retraction of the head in one litter. Clinical examination revealed signs of paralysis, particularly in the hind limbs.

Subsequent investigation included radiological examination of the skull and vertebral column, and the injection of 'Dag' colloidal carbon into the ventricles during life. Coronal sections of the head were prepared after deep freezing; the hinder part of the cerebellum and lower end of the fourth ventricle were exposed by cervical laminectomy; and frozen sections made transversely through the mid-brain and cerebral aqueduct at all levels were prepared and stained. In addition the optic nerves and their surroundings were examined in all the animals.

Numerous control rabbits of comparable ages were examined at every stage of the investigation.

Findings

Radiography revealed an enlargement of the calvarium of the skull and a "beaten silver" appearance of the bone similar to that observed in human hydrocephalus. This finding led to a tentative diagnosis of hydrocephalus and was largely responsible for determining the methods by which the material was afterwards treated.

In all the rabbits examination of the coronal sections of the cerebral hemispheres revealed gross dilatation of the lateral and third ventricles. In some specimens the cortex and white matter were reduced to such an extremely thin layer lining the interior of the skull that it was surprising to find such a condition compatible not only with life but even with comparatively few clinical signs of hydrocephalus (fig. 1). In 1 rabbit the brain tissue had herniated through the skull and formed a slight swelling under the skin.

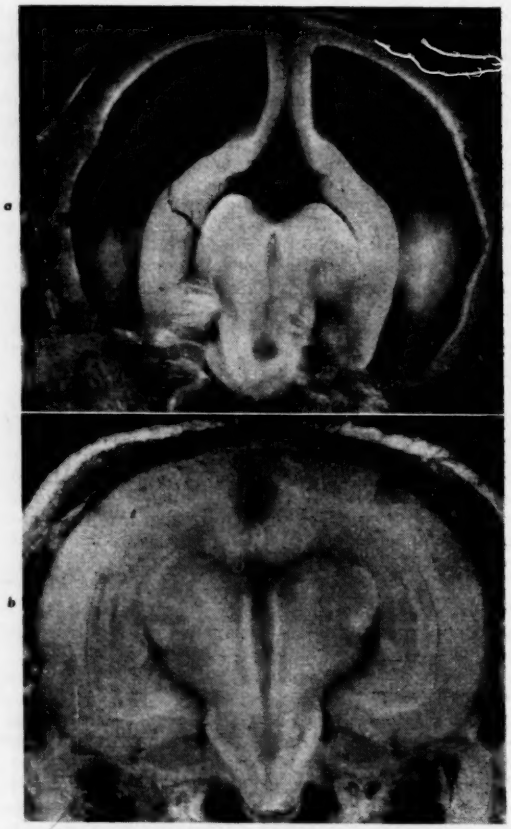


Fig. 1—Coronal sections through heads of *a*, hydrocephalic (× 1·5) and *b*, normal rabbit (× 2·5).

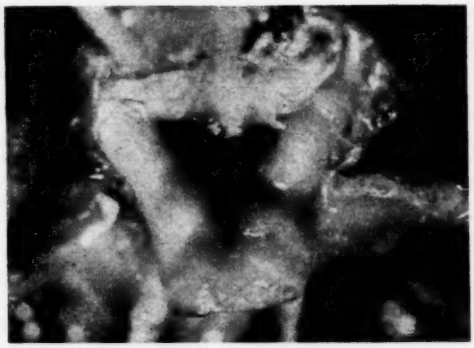


Fig. 2—Constriction of optic nerves in region of optic foramina of hydrocephalic rabbit (× 7·5).

Laminectomy showed that the cerebellum had herniated through the foramen magnum, but the fourth ventricle appeared normal, and this was confirmed by subsequent microscopy. In those animals in which colloidal carbon had been injected into the ventricles there was no sign of any carbon in the fourth ventricle, although the dilated lateral and third ventricles were well filled. On further exposure of the brain and cranial nerves it was found that both optic nerves exhibited well-marked constrictions at the optic foramina (fig. 2). In none of the specimens was any deformity of the foramen magnum or of the base of the skull observed, nor was there any evidence of meningitis.

The examination of transverse sections through the cerebral aqueduct revealed a well-marked stenosis at the level of the superior colliculus. Fig. 3 shows transverse sections through the aqueducts of *a*, hydrocephalic and *b*, normal rabbits. The cross-sectional area of the lumen of the aqueduct in the hydrocephalic rabbit was 0·16 sq. mm. and that of the normal rabbit 0·71 sq. mm. Above this level the lumen of the aqueduct was dilated, and distal to the constriction the aqueduct appeared normal. The colloidal carbon did not pass beyond the constriction.

In the absence of any figures for the size of the aqueduct in the normal rabbit, comparison was made with sections through various comparable levels in control rabbits of corresponding age and size. As a result of these investigations, it was concluded that the signs of nervous disorder in these vitamin-A-deficient rabbits could be attributed to hydrocephalus produced by stenosis of the cerebral aqueduct. Further, there appeared to be a causal relationship between the vitamin-A deficiency and the development of the aqueductal stenosis.

Discussion

These findings introduce an entirely new concept of the ætiology of some forms of hydrocephalus.

The question naturally arises whether the hydrocephalus in these rabbits could be explained by a genetic factor. Congenital hydrocephalus attributed to a genetic factor has been reported in mice (Grüneberg 1943, Clark 1934). It must be presumed that mutation was responsible for the appearance of these strains, although no information is available about their diet. 14 of the present 16 rabbits belonged to a strain separated by Dr. John Hammond in 1924 and inbred since then. The characteristics of this strain have been carefully documented, and there is no record of spontaneous congenital hydrocephalus. It is considered that the finding of hydrocephalic young in five litters from different matings rules out the possibility of a mutation having been responsible for the condition. Further, of numerous control rabbits from the same strain none has had hydrocephalus.

Because of its economic importance, much attention has been directed to the effects of vitamin-A deficiency in farm animals.

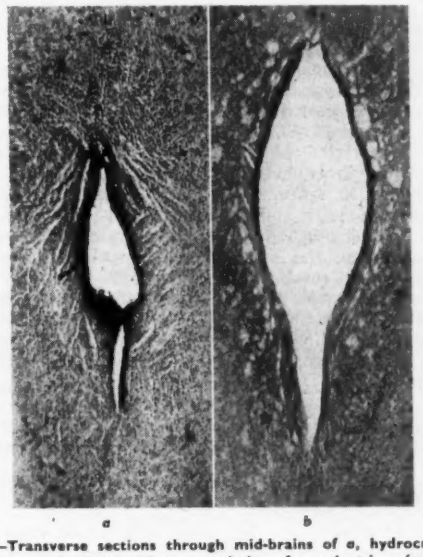
As long ago as 1916, Hart et al. noted that pigs fed on a deficient diet developed paralysis of the limbs. At necropsy the vertebral canal contained a "considerable quantity" of fluid, and in the spinal cord the anterior-horn cells "were shrunken, surrounded by fluid, and appeared to be under pressure." For some reason, however, the brain, though removed, was not examined.

Mellanby, working mainly on puppies, has contributed largely to the study of the effect of vitamin-A deficiency on the nervous system. He has concluded that disorganisation of bone formation leading to overgrowth is responsible for compression of the optic nerves and the consequent papilloedema (Mellanby 1938). The results of the present investigation suggest that the signs of papilloedema and the compression of the optic nerves observed by Mellanby may well have been the consequences of the hydrocephalus which he noted (Mellanby 1941) but to which he does not seem to have attached much importance.

The view that abnormal bone growth is responsible for the production of nervous lesions has been accepted by Moore (1939) as the explanation of night-blindness, papilloedema, and optic atrophy in calves fed on a diet deficient in vitamin A.

Moore et al. (1935) also observed that such calves had partial paralysis and held their heads in a peculiar position. At the same time they considered that the pressure of the cerebrospinal fluid (C.S.F.) was raised. Moore and Sykes (1941) reported that there was a progressive increase in the pressure of the C.S.F. as the condition developed. They observed also that in 1 calf the ventricles were dilated, but apparently they did not attach any significance to this observation; nor do they seem to have reached any definite conclusions about the cause of the increased pressure of the C.S.F. Unfortunately in none of these investigations was a detailed histological examination of the brain reported, and it is therefore impossible to say whether Moore and Sykes were dealing with the effects of aqueductal stenosis.

Many other investigators have commented on the incidence of lesions of the nervous system in animals subjected to experimental vitamin-A deficiency, and in some instances have noted herniations of the brain such as are known to occur in hydrocephalus in man (Wolbach and Bessey 1941). The clinical course of the disease reported in many of these accounts accords closely with the picture observed in the present experiments and



a *b*

Fig. 3—Transverse sections through mid-brains of *a*, hydrocephalic and *b*, normal rabbits. Note constriction of aqueduct in *a* (× 37·5).

suggests that the underlying pathology may well have been similar.

Hydrocephalus in man has attracted the attention of investigators from ancient times. Today most authorities agree that it is often congenital, although the appearance of symptoms may occasionally be delayed until the third or fourth decade. The incidence of hydrocephalus due to abnormality of the cerebral aqueduct has been calculated as about 1 in every 9000 births (Woollam and Millen 1953). The authoritative monograph of Dorothy Russell (1949) has clarified the mass of literature on hydrocephalus and has placed its pathology on a sound basis. She has classified as the principal maldevelopments of the cerebral aqueduct, stenosis, forking, and septum formation. That a deficiency of vitamin A in the mother, and consequently in the newborn, may determine the development of a stenosis of the aqueduct has, however, not hitherto been reported.

The clinical picture observed in the present experiments and the histological findings of an obstructive hydrocephalus due to stenosis of the cerebral aqueduct, coupled with the carefully controlled and documented dietary conditions, leave no doubt that there was a causal relationship between the maternal vitamin-A deficiency and the appearance of stenosis of the cerebral aqueduct in the offspring. Hydrocephalus and the production of the symptoms of disease of the nervous system followed as a direct consequence of the stenosis.

Conclusions and Comment

Although the manner in which the deficiency of vitamin A in the diet of laboratory animals is associated with the production of hydrocephalus by aqueductal stenosis is not yet fully understood, the implications are of great importance. The relation of maternal vitamin-A deficiency to hydrocephalus in the offspring opens up a new field of inquiry and merits an extensive clinical investigation.

Many important problems concerned with the physiology and pathology of the C.S.F. await solution. Surgical interference has been, until now, the only method available for the production of experimental hydrocephalus, and this has been a limiting factor in research into the surgical treatment of the condition. The ability to reproduce hydrocephalus in young animals through feeding a diet deficient in vitamin A to the mothers offers a simple and readily available source of hydrocephalic animals for experimental investigations.

Many questions remain unanswered and are the subject of further investigation. Can hydrocephalus be produced by inadequacy of vitamin-A intake or utilisation after birth? What is the level of vitamin-A intake necessary to prevent hydrocephalus in the offspring? Is it possible to arrest hydrocephalus at any stage by supplementing the diet with vitamin A? Is the aqueductal stenosis a direct result of the deficiency, or is it secondary to some undetermined factor? At this stage the evidence suggests that the stenosis is the primary condition and the direct result of the deficiency.

If the nervous disorders reported in farm animals are equally attributable to stenosis of the cerebral aqueduct, the implications in relation to animal nutrition must be of considerable importance to agricultural economy.

Summary

Hydrocephalus occurring in young rabbits as a direct consequence of vitamin-A deficiency in the mothers has been investigated.

The underlying cause of this hydrocephalus is stenosis of the cerebral aqueduct.

The hydrocephalus has been held to be responsible for the constriction of the optic nerves and for the paralyses found in these animals.

These findings are discussed in relation to genetic hydrocephalus and to reports on the effects of vitamin-A deficiency on laboratory and farm animals.

The discovery of maternal vitamin-A deficiency as a cause of hydrocephalus in the progeny throws open an entirely new field for clinical investigation into the pathology of hydrocephalus, and for experimental observation on the physiology of the cerebrospinal fluid.

We wish to express our gratitude to Prof. J. D. Boyd and Dr. J. Hammond for their advice and encouragement. Thanks are also due to Mr. T. R. L. Brooks for the photographs and to Mr. R. Smith for technical assistance.

REFERENCES

Clark, F. H. (1934) *Anat. Rec.* **58**, 225.
Grüneberg, H. (1943) *J. Genet.* **45**, 1.
Hart, E. B., Miller, W. S., McCollum, E. V. (1916) *J. biol. Chem.* **25**, 239.
Mellanby, E. (1938) *J. Physiol.* **94**, 380.
— (1941) *Ibid*, **99**, 467.
Moore, L. A. (1939) *J. Nutr.* **17**, 443.
— Huffman, C. F., Duncan, C. W. (1935) *Ibid*, **9**, 533.
— Sykes J. F. (1941) *Amer. J. Physiol.* **134**, 436.
Russell, D. (1949) *Spec. Rep. Ser. med. Res. Coun., Lond.* no. 265.
Wolbach, S. B., Bessey, O. A. (1941) *Arch. Path.* **32**, 689.
Woollam, D. H. M., Millen, J. W. (1953) *Brain*, **76**, 104.

AUREOMYCIN-RESISTANT STAPHYLOCOCCAL ENTEROCOLITIS

REPORT OF TWO FATAL CASES

D. L. GARDNER
M.A. Camb., M.B. Edin., M.R.C.P.E.
JUNIOR ASSISTANT PATHOLOGIST, DEPARTMENT OF PATHOLOGY, UNIVERSITY OF CAMBRIDGE

STAPHYLOCOCCAL resistance to the "broad-spectrum" antibiotics is attracting increasing attention (Finland and Haight 1953, Needham and Nichols 1953). Hospitals and other closed communities are recognised to be particularly prolific breeding-grounds for resistant organisms (Lepper et al. 1953), the source of increasing numbers of infections for which there is no specific therapy (Spink 1953).

Cases have been published in the U.S.A. and in France (Janbon et al. 1952, Terplan 1953, *Minnesota Medicine* 1953) in which death took place rapidly and unexpectedly in patients under treatment with aureomycin or with oxytetracycline (terramycin). Diarrhœa, electrolyte imbalance, dehydration, and sometimes a choleriform state have developed suddenly while these antibiotics were being given for infections unrelated to the gastro-intestinal canal. Many of these patients were in the immediate postoperative period, or had been suffering from the effects of malnutrition or chronic alcoholism.

Coagulase-positive staphylococci, resistant to the particular antibiotic in use, were isolated in pure culture from the intestinal canal of most of these patients, before or after death. The syndrome has therefore become known as acute, or fulminating, staphylococcal gastro-enterocolitis. In some cases the staphylococci were shown to belong to enterotoxin-producing strains (Janbon et al. 1952), but enterotoxin has not been proved responsible for the condition. Indeed, it appears probable that similar symptoms can result from the overgrowth of other antibiotic-resistant organisms normally found in the intestine in small numbers.

The two fatal cases described below are believed to be examples of this syndrome.

Case-records

Case 1.—A Finnish girl, aged 19, complained on Dec. 28, 1952, of pain in the feet, left knee, wrists, elbows, and shoulders. Next day her temperature was 99°F. She gave a history of severe sore throat and a raised temperature four weeks previously, when she had stayed in bed a week. As a child she had had Ludwig's angina at the age of 6 years and scarlatina at the age of 13. The latter kept her in bed for a

month, and at that time it had been suggested that her heart had been affected.

Examination revealed limitation of joint movement owing to pain, and an inflamed throat.

Course of Illness

Treatment with soluble penicillin 0·5 mega-unit six-hourly was begun. Two days later the patient had severe left inframammary pain and some signs at the base of the left lung. Rheumatic fever had been diagnosed, but therapeutic doses of aspirin had been without effect. By Jan. 6, 1953, hæmolytic streptococci had disappeared from the throat and the penicillin was discontinued. Pain became worse and was accompanied by breathlessness, high fever, and exhaustion. Treatment with aureomycin, 0·5 g. six-hourly, followed by 250 mg. six-hourly, was superseded three days later, because the patient's condition had deteriorated, by oxytetracycline 0·5 g. intravenously and 0·5 g. six-hourly by mouth. Pericarditis and pleurisy persisted. On Jan. 11 a widespread morbilliform rash developed which lasted three days.

On Jan. 13 the patient began to have more frequent bowel movements, and two days later frank watery diarrhœa. Oxytetracycline, of which 10 g. had been given, was discontinued, and efforts were concentrated on correcting the severe state of fluid imbalance which had developed, but she continued to go downhill, and she died on the evening of Jan. 19.

Investigations

During the illness blood-cultures had been repeatedly sterile, and no organisms of the enteric, salmonella, or dysentery groups had been isolated from the stools, which contained numerous pus cells. On the patient's admission to hospital group-A hæmolytic streptococci had been isolated from her throat. Repeated blood-counts showed a moderate to severe polymorph leucocytosis, with a shift to the left, and mild normochromic normocytic anæmia. The erythrocyte-sedimentation rate remained high throughout the illness. The urine was sterile, containing only a few granular and hyaline casts and a few pus cells.

Post-mortem Findings

Necropsy on Jan. 20 showed a well-nourished young girl with occasional bruises on the arms. The œsophagus was normal. The stomach was distended with gas and some slightly bloodstained fluid. There were occasional small petechial hæmorrhages in the mucosa. The small intestine appeared normal, containing thin, faintly turbid, and bile-stained fluid. In the distal part of the colon, mainly in the region of the junction of the splenic flexure and the transverse colon, were some submucosal hæmorrhages and areas of hyperæmia, with a few superficial erosions. The colon was distended throughout by turbid bile-stained fluid. Apart from some submucosal hæmorrhages the rectum appeared normal. In the mesentery were some slightly enlarged lymph-nodes (up to 1·3×1·0×0·8 cm.) which had a pinkish-mauve hyperæmic surface on section. The liver showed some areas of pale opaque yellow discoloration, anteriorly and inferiorly, extending for a variable distance into the cut surface. It was flabby and contained a moderate to considerable amount of fat. A conspicuous fibrinous pericarditis gummed together the pericardial surfaces anteriorly, but left enough space to contain 30 ml. of bloodstained fluid, in which were some flakes of fibrin. The pale flabby myocardium showed no evidence of fibrosis or necrosis. The heart valves, apart from a moderate hyperæmia of the aortic valve, were normal. There were bilateral bloodstained pleural effusions, with a fibrinous pleurisy corresponding to the posterior parts of both lower lobes and both superior diaphragmatic surfaces. The capsules stripped easily from the mottled yellow-red renal surfaces, and the moderately enlarged spleen showed only congestion.

Histology.—Microscopy showed no significant abnormality in the large intestine. There was possibly more loss of structure in the part of the mucosa next to the lumen than was likely to be due to post-mortem autolysis alone, but inflammatory changes were at the most very slight. There were small areas of degeneration, not acute, throughout the heart muscle, associated with atrophied muscle-fibres, brown pigment, and fine and cellular fibrous tissue. There was one Aschoff body in the myocardium related to the base of the aortic valve.

Bacteriology.—A profuse growth of coagulase-positive staphylococci was obtained from the respiratory tract, the jejunum, the descending colon, and the rectum. The staphylococci were resistant to penicillin, aureomycin, and oxytetracycline but sensitive to streptomycin and chloramphenicol. (Sensitivities were determined by a simple filter-paper-strip diffusion technique, using the Oxford staphylococcus as a control organism.)

The *post-mortem diagnosis* was acute gastroenteritis and acute rheumatism with pericarditis and myocarditis.

Case 2.—A retired college servant, aged 65, who had had for more than five years severe and progressive osteo-arthritis of the left hip-joint, and had had a Judet arthroplasty done in November, 1951, was readmitted for a revision operation because of persistent pain.

Examination revealed that movements in the left hip were almost entirely prevented by pain, and that there was great discomfort both on sitting and on lying down. There was obvious pallor, the blood-pressure was 180/90 mm. Hg, and the heart sounds were faint but normal.

The Final Illness

On June 17, 1953, the old anterolateral Smith-Petersen scar was excised and gross thickening and new bone formation found in approaching the left hip-joint. The old acrylic head was intact but rather mobile. It was removed, the rim of the neck re-reamed, and a prosthesis of similar size inserted. During the operation the patient received a pint of whole blood.

On June 18 treatment with prophylactic aureomycin 250 mg. four-hourly was begun, and next day the patient's condition was entirely satisfactory. On June 22 he was rather anxious, complained of pain in the operation site, and had a distended abdomen. The bowel sounds were normal. Paraldehyde 5 ml. was given. Frequent bowel movements continued all day, and the aureomycin was discontinued.

On the following night there was sudden collapse, without pain, the patient remaining fully conscious. The blood-pressure was 90/60 mm. Hg. No abnormal signs were found in the heart, lungs, or central nervous system. A blood-count showed moderate normochromic normocytic anæmia. Intravenous fluids and intravenous corticotrophin 25 mg. were given. A few hours before death it was considered that a staphylococcal gastro-intestinal infection was the probable cause of his collapse. A swab from the rectum, taken at this time, subsequently produced a profuse pure growth of coagulase-positive staphylococci, resistant to penicillin, aureomycin, and chloramphenicol but sensitive to streptomycin. No organisms of the enteric, salmonella, or dysentery groups were isolated.

In spite of treatment, the patient died shortly afterwards.

Post-mortem Findings

Necropsy on June 25 showed a well-nourished elderly man with a recent surgical scar over the anterior aspect of his left hip-joint. When the peritoneal cavity was opened, moderately dilated hyperæmic loops of small and large intestine presented, whose peritoneal surfaces were smooth and shining. No free fluid was present in the peritoneal cavity. The whole length of the small intestine, cæcum, and large intestine contained only small amounts of bile-stained watery fluid. The mucosal surface of the small intestine showed slight reddish-brown congestion. The mucosa of the large intestine was deeply injected, brownish-grey, and covered with a loosely adherent incomplete film of fibrinous exudate, this appearance being maximal in the cæcum, ascending colon, and transverse colon, and absent from the descending colon and rectum. The mesentery appeared normal. The œsophagus, stomach, and duodenum were normal. The cut surface of the liver was congested and rather flabby but otherwise normal.

There was slight atheroma of the proximal ends of the coronary and cerebral arteries, moderate emphysema of both lungs, and firm fibrous adhesions (up to 3 cm. in diameter) at the base of the left lung and at the apex of the right lung.

Histology.—Microscopy showed inflammatory changes in the colon considerably less than had been suggested by the naked-eye appearances. In the transverse colon, which was most affected, there was considerable leucocytic infiltration in the base of the mucosa with thrombosed small blood-vessels and some (possibly autolytic) lack of nuclear staining in the surface half of the mucosa. Throughout the submucosa there was an excess of cells, most of which were histiocytes or macrophages, with some polymorphs.

Bacteriology.—A profuse pure growth of coagulase-positive staphylococci was obtained post mortem from the respiratory tract, the stomach, the ileum, and the colon. The staphylococci were resistant to penicillin and aureomycin. Coliform bacilli were conspicuously absent.

The *post-mortem diagnosis* was acute staphylococcal enterocolitis following a revision arthroplasty.

Discussion

In both cases severe ultimately fatal diarrhœa developed unexpectedly during an illness unrelated to the gastro-intestinal canal; in both cases aureomycin or terramycin had been used to treat the primary disease; and in both cases pure profuse growths of coagulase-positive staphylococci, resistant to the particular antibiotic used, were obtained from the intestine before or after death. The gram-negative bacilli characteristic of the normal fæcal flora were conspicuously absent.

It seems likely that the use of the broad-spectrum antibiotics led to the elimination of all intestinal bacteria except the resistant staphylococci. The latter then grew rapidly and within a few days had selectively colonised the entire intestinal canal. The disturbance in intestinal metabolism thus produced may have been sufficient to cause death in both cases. Alternatively the production of enterotoxin by the staphylococci may have been responsible.

Both cases are probably examples of a syndrome which has become known as acute staphylococcal enterocolitis.

Mild gastro-intestinal disturbances accompanying aureomycin or oxytetracycline therapy are common. There is almost invariably some change in the bowel flora (*Minnesota Medicine* 1953). These changes are usually sufficient only to cause mild symptomatic discomfort or inconvenience (Janbon et al. 1952). In the patient already weakened by previous disease, however, or after severe operation, the disturbance produced by the alteration in intestinal flora may be sufficiently severe to cause death.

The prevention of staphylococcal enterocolitis in hospital patients is made more difficult by the high incidence among the staff of nasal carriers of staphylococci resistant to aureomycin and oxytetracycline and by the large numbers of these organisms present in the ward dust. In these circumstances the use of the broad-spectrum antibiotics after major operations, or in particularly debilitated patients, is inevitably accompanied by a certain risk.

It has been suggested that this risk of severe enterocolitis could be minimised by careful observation of the fæcal flora during the administration of the broad-spectrum antibiotics (Sloss cited by *Minnesota Medicine* 1953). The daily examination of a simple gram-stained film of the fæces would be enough to indicate a radical change from predominantly gram-negative bacilli to predominantly gram-positive cocci.

Should the enterocolitis develop suddenly, and be recognised as a complication of the antibiotic therapy, the only specific treatment for the condition would be to encourage the return of the normal bowel flora. This can be done by stopping the antibiotic in use and by substituting a drug to which the staphylococci remain sensitive. Sloss suggested that erythromycin could be used. Most staphylococci appear still to be sensitive to this antibiotic, which is known to have little action against the gram-negative bacilli (Herrell et al. 1953).

Summary

The broad-spectrum antibiotics often cause radical changes in the normal flora of the intestinal canal. When these changes take place in patients who have recently undergone a serious operation or have some debilitating disease, the diarrhœa which follows may be very severe.

Two cases are described in which death resulted from the intestinal proliferation of coagulase-positive staphylococci following the administration of antibiotics to which these staphylococci were resistant. It is uncertain whether staphylococcal enterotoxin was responsible.

This form of staphylococcal enterocolitis may be avoided by daily observation of the predominant fæcal flora. Should severe diarrhœa develop, it may be possible to encourage a return of the normal bowel flora by the use of another antibiotic, such as erythromycin, to which the staphylococci are known to be sensitive and which does not suppress the gram-negative bacilli.

I wish to thank Dr. A. M. Barrett, university morbid anatomist, and Dr. M. H. Gleeson-White, university bacteriologist, for their advice, and Mr. T. J. Fairbank, orthopædic surgeon to Addenbrooke's Hospital, for permission to publish his case-records.

REFERENCES

Finland, M., Haight, T. H. (1953) *Arch. intern. Med.* **91**, 143.
Herrell, W. E., Nichols, D. R., Martin, W. J. (1953) *J. Amer. med. Ass.* **152**, 1601.
Janbon, L., Bertrand, J., Roux, J., Salvaing, J. (1952) *Bull. Acad. Med., Paris*, **136**, 59.
Lepper, M. H., Dowling, H. F., Jackson, G. G., Hirsch, M. M. (1953) *Arch. intern. Med.* **92**, 40.
Minnesota Medicine (1953) **36**, 63.
Needham, G. M., Nichols, D. R. (1953) *J. Lab. clin. Med.* **41**, 150.
Spink, W. W. (1953) *J. Amer. med. Ass.* **152**, 585.
Terplan, K. (1953) *Amer. J. Path.* **29**, 595.

AMINO-ACID COMPOSITION OF EIGHT DERMATOPHYTE FUNGI

P. J. HARE
M.D. Johns Hopkins, M.R.C.P.
CONSULTANT DERMATOLOGIST, UNIVERSITY COLLEGE HOSPITAL, LONDON

THE amino-acid composition of eight dermatophyte fungi has been determined qualitatively by paper chromatography, using acid hydrolysates of the fungi grown in a simple fluid medium with ammonium sulphate as the source of nitrogen.

METHOD

Microsporum audouini Gruby, *M. canis* Bodin, *M. gypseum* (Bodin) Brumpt, *Trichophyton mentagrophytes* (Robin) Blanchard var. *gypseum*, *T. discoides* Sabouraud, *T. violaceum* Bodin, *T. rubrum* (Castellani) Sabouraud, and *Epidermophyton floccosum* (Harz) Langeron and Milochevitch were cultured on beerwort agar. Small transplants of aerial mycelium were made into 50 ml. quantities of a liquid medium in conical flasks of 150 ml. capacity. The medium was composed of glucose 50 g., ammonium sulphate 4 g., KH_2PO_4 5 g., K_2HPO_4 5 g., magnesium sulphate 0·25 g., ferrous sulphate 1 mg., manganese chloride 1 mg., zinc sulphate 1 mg., and distilled water 1000 ml., sterilised in an autoclave. The fungi were allowed to grow at room-temperature with occasional agitation by hand. They grew as mats on the surface of the medium. Only *M. canis* showed distinctive microscopical features under these conditions, but all the fungi yielded identifiable subcultures on beerwort agar.

At intervals up to three months the cultures were harvested, filtered free from medium, washed with distilled water, and dried in an oven at 60°F, with an average yield of 300 mg. of dry mycelium. The fungi were then hydrolysed with 6*N* HCl for twenty-four hours. The hydrolysates were thrice reduced to dryness and washed with distilled water. The yield was taken up in a small volume of distilled water, and samples were submitted to two-dimensional partition chromatography on filter-paper, using phenol and 'Collidine' as solvents (Dent 1948). Duplicates were prepared after treatment of samples of the hydrolysates with hydrogen peroxide and ammonium molybdate. The papers were sprayed with 'Ninhydrin' to detect the amino-acid spots. The papers were also treated with Pauly's diazo reagent after removal of the solvents with acetone.

RESULTS

The qualitative results were similar in each case. Spots corresponding to the expected sites of the following were seen: aspartic acid, glutamic acid, glycine, threonine, alanine, histidine, lysine, arginine, proline, valine, leucine(s), tyrosine, cystine (as cysteic acid after oxidation), serine, and methionine (as its sulphone after

oxidation). Glucosamine, presumably derived from fungus polysaccharide, was also present. No hydroxyproline was detected. Tryptophane does not survive acid hydrolysis; baryta and tryptic digests provided unsatisfactory material for its detection.

No great quantitative differences were observed in the composition of the eight fungi, judged by the size and intensity of the colours of the spots. The amino-acids in greatest concentration were the leucines, valine, alanine, glutamic acid, and aspartic acid. These results were at least qualitatively similar to those for various non-pathogenic fungi (Work and Dewey 1953) including *Neurospora crassa*, *Aspergillus glaucus*, and *Cephalosporium acremonium*.

DISCUSSION

The fungi producing superficial mycoses grow in the horny layer of the epidermis, the nail plate, or the hair shaft. These structures are composed largely of keratin. They also contain non-protein substances derived from their parent tissues. Bolliger (1951), for example, has demonstrated the presence of 3·5% of water-soluble substances in clipped rabbit fur. Watery extracts of human hair support the growth of ringworm fungi (Felsher 1949), but there is little doubt that keratin is their main source of nourishment in parasitic life. They have been cultured on pure keratin (MacFadyen 1896). Although no keratolytic enzymes have been found in these fungi (Tate 1929), keratin is undoubtedly broken down. In the case of *M. gypseum* the degradation of wool has been followed in detail (Stahl et al. 1949a and b, 1950).

The ability of the dermatophyte fungi to utilise amino-acids has been investigated by various workers—e.g., Robbins (1950), Archibald and Reiss (1950), and Johnson and Grimm (1951). In such studies the comparative value of various amino-acids as sources of nitrogen has been examined by adding them singly and in combination to otherwise complete synthetic media. In general it has been shown that almost any amino-acid will permit the growth of these fungi. The sulphur-containing amino-acids, so abundant in keratin, are comparatively poor sources of nitrogen for the dermatophytes. They do not grow if hydroxyproline is given as the sole source of nitrogen. Rothman (1951) has suggested that these fungi are obligate parasites of keratin because hydroxyproline is absent from the latter.

The present study shows that the strains of the eight fungi investigated can utilise ammonium sulphate as their source of nitrogen and that they are autotrophic for vitamins. It is not suggested that optimal growth was obtained. The amino-acid composition of these fungi appears to be similar to that of non-pathogenic fungi and does not explain the parasitic growth of ringworm fungi in keratin. Hydroxyproline was not detected and presumably does not enter into the nitrogen metabolism of these fungi.

SUMMARY

The amino-acid composition of eight dermatophyte fungi is qualitatively similar to that of non-pathogenic fungi.

No hydroxyproline was detected.

I wish to thank Prof. Wilson Smith, Dr. C. E. Work, and Dr. D. Dewey for facilities, guidance, and technical aid.

REFERENCES

Archibald, R. M., Reiss, F. (1950) *Ann. N.Y. Acad. Sci.* **50**, 1388.
Bolliger, A. (1951) *J. invest. Derm.* **17**, 79.
Dent, C. E. (1948) *Biochem. J.* **43**, 169.
Felsher, Z. (1949) *J. invest. Derm.* **12**, 139.
Johnson, S. A. M., Grimm, N. Y. (1951) *Ibid*, **17**, 305
MacFadyen, A. (1896) *J. Path. Bact.* **3**, 176.
Robbins, W. J. (1950) *Ann. N.Y. Acad. Sci.* **50**, 1357.
Rothman, S. (1951) See *J. invest. Derm.* **17**, 309.
Stahl, W. H., McQue, B., Mandels, G. R., Siu, R. G. H. (1949a) *Arch. Biochem.* **20**, 422.
— — Siu, R. G. H. (1949b) *J. biol. Chem.* **177**, 69.
— — — (1950) *Arch. Biochem.* **27**, 211.
Tate, P. (1929) *Parasitology*, **21**, 31.
Work, C. E., Dewey, D. (1953) *J. gen. Microbiol.* (in the press).

LOCALISED PRETIBIAL MYXŒDEMA
TREATED WITH CORTISONE

R. S. M. D. INCH
M.B. Edin., M.R.C.P.E.
REGISTRAR

C. F. ROLLAND
B.A. Camb., M.B. Edin., M.R.C.P.E.
SENIOR REGISTRAR AND LECTURER IN THERAPEUTICS

From the Department of Therapeutics, Edinburgh University, and the Clinical Laboratory, Royal Infirmary, Edinburgh

PRETIBIAL myxœdema is usually regarded as a rare complication of, or sequel to, hyperthyroidism, but Trotter and Eden (1942) suggested that it may occur in as many as 3% of hyperthyroid cases. The first English description was given by Watson-Williams in 1895, but since then it seems to have been of greater interest to the dermatologist than to the endocrinologist.

Pretibial myxœdema is said to be always bilateral though not necessarily symmetrical, and the deposits may not appear simultaneously on both legs and may not develop at the same speed. The histological and biochemical features have been well described by Watson and Pearce (1947). Other workers agree that the connective tissue of the cutis is infiltrated with mucopolysaccharides. The appearance of the skin, with its irregular surface and sparse coarse hair, is sufficiently recognised and requires no further description.

Fig. 1 (case 1)—Exophthalmos.

The ætiology of the condition is unknown but is the subject of two hypotheses: (1) that the development of the localised myxœdema is the direct result of an unexplained insensitivity of the pretibial tissues to the action of the thyroid hormone; and (2) that the lesions, like the exophthalmos with which they are almost always associated, are caused in some way by overproduction of the thyrotrophic hormone of the anterior pituitary (Vilanova and Canadell 1949). At present there is little evidence to support either hypothesis.

Various forms of treatment, such as local excision, oral and local administration of thyroxine, radiant heat, massage, and local injections of hyaluronidase, have all proved disappointing, and Trotter and Eden (1942) concluded that the lesions were not affected by any form of treatment in use at that time.

Fig. 2 (case 1)—Pretibial myxœdema and deposit on dorsum of right hallux.

We report here three cases which showed some interesting features and describe our experience of the use of cortisone acetate in this condition.

Case-reports

Case 1.—A woman developed hyperthyroidism at the age of 36. For the first eight months she was treated with methyl thiouracil, and exophthalmos appeared. As control was unsatisfactory, partial thyroidectomy was performed: she subsequently became hypothyroid, and her exophthalmos increased. Coincidently pretibial myxœdema appeared on both legs and her fingers became clubbed. About nine months after the operation thyroid treatment relieved the hypothyroidism but had no effect on the pretibial myxœdema. Ophthalmoplegia began to complicate the exophthalmos and sixteen months after thyroidectomy her pituitary was irradiated without effect. Some three months later she was seen by us for the first time. Though her myxœdema was controlled, she had exophthalmos (Hertel exophthalmometer: right eye 26 mm., left eye 26 mm.) (fig. 1), mild ophthalmoplegia, gross bilateral pretibial myxœdema (fig. 2), and marked clubbing of the fingers (fig. 3).

Fig. 3 (case 1)—Clubbed fingers.

Fig. 4 (case 2)—Ophthalmoplegia.

Case 2.—A man developed hyperthyroidism in 1933 at the age of 20 and was treated by X-irradiation of the thyroid gland. He became euthyroid but developed exophthalmos and mild ophthalmoplegia. He remained in full-time employment as a miner, but when aged 36 sustained a trivial injury to his left leg and thereafter developed pretibial myxœdema at the site of injury. This was soon followed by slight pretibial myxœdema of the other leg. A year later the left leg was incised without benefit to the pretibial myxœdema, and a large keloid scar developed at the site of the incision. He was first seen by us when he was 39, and although he was euthyroid he had considerable exophthalmos (Hertel exophthalmometer: right eye 25 mm., left eye 26 mm.), some ophthalmoplegia (fig. 4), and chemosis of the left conjunctiva. The pretibial myxœdema (fig. 5) with its keloid scar formed a large mass on the left leg, and there was a smaller area on the right leg, with a pad on the dorsum of the left hallux (fig. 6). He also had gross finger clubbing (fig. 7) but did not know when this had started.

Fig. 5 (case 2)—Pretibial myxœdema.

Fig. 6 (case 2)—Deposit on dorsum of left hallux.

Case 3.—A woman had developed myxœdema at the age of 44 and had been treated with thyroid extract. She remained well until bilateral exophthalmos appeared at the age of 49, and this was soon complicated by circumorbital œdema, ophthalmoplegia, and extensive bilateral pretibial myxœdema. When first seen by one of us at the age of 50 she was inadequately controlled with thyroid; and, when the dose of this was increased, her ophthalmoplegia disappeared, but exophthalmos remained, and her pretibial myxœdema was unaffected. There was no clubbing of the fingers.

This case was exceptional because there was no evidence that the patient had ever had hyperthyroidism.

Treatment

Case 1 was admitted for a trial of the effect of large doses of cortisone in the treatment of exophthalmic ophthalmoplegia (Chandler and Hartfall 1952). She was given cortisone acetate suspension (Merck) by intramuscular injection. After she had had 0·8 g. in six days, the plaques of pretibial myxœdema had become softer, especially at their edges; but the exophthalmos was unchanged. The systemic administration of cortisone was then supplemented by infiltrating the suspension into an area of pretibial myxœdema. An isolated plaque about 3 cm. in diameter was chosen, and 25 mg. of cortisone acetate (1 ml. of the suspension) was infiltrated with a long fine needle. The injection was almost painless, and twenty-four hours later the infiltrated area showed a considerable change compared with the untreated part of the plaque. The area had shrunk, the skin over it had wrinkled and become slightly cyanosed, and the firm thick tissue of the pretibial myxœdema had disappeared. Two further infiltrations of the same dose led to the almost complete disappearance of the plaque. Thereafter the intramuscular injections were discontinued because no improvement was evident in the exophthalmos after 1·5 g. of cortisone had been administered in seventeen days. It was, however, thought worth while to continue the local infiltration of cortisone into the

Fig. 7 (case 2)—Clubbed fingers.

pretibial deposits, and 0·525 g. was given in this way in thirteen weeks. Although some improvement followed each infiltration this was less striking than that achieved when cortisone was given systemically in addition to the local infiltration. Hyaluronidase 500 units in 1 ml. of physiological saline solution injected into the pretibial deposit so changed its character that within a few minutes it became an area of pitting œdema. On three subsequent occasions a similar dose of hyaluronidase was mixed with 1 ml. of cortisone suspension and infiltrated into the pretibial plaque in the hope that the cortisone would exert a more widespread action, but this expectation was not fulfilled. The pretibial myxœdema gradually reverted to its previous state after the infiltration of any particular area had been discontinued for some time. In view of this the treatment was abandoned.

In *case 2* intramuscular cortisone was also given for the exophthalmic ophthalmoplegia, and 1·9 g. was injected in seventeen days without improving the exophthalmos. As in case 1, the addition of local infiltrations of cortisone, given during the period of systemic injections, led to a striking improvement in the pretibial myxœdema. When the intramuscular injections were stopped the local treatment was less successful, and reversal to the original state took place when the local treatment was abandoned. This patient received 0·212 g. of cortisone by local infiltration in four weeks. Hyaluronidase again failed to increase the effects of the cortisone infiltration, and the keloid scar was completely unaffected by the treatment.

Case 3 was not given intramuscular cortisone. In this patient the effects of cortisone infiltration in one leg were compared with those of hyaluronidase in the other. Cortisone 0·7 g. was infiltrated into the left leg in eleven weeks, and hyaluronidase 9000 units into the right leg in the same time. In the left leg there was a slight improvement after each injection, about the same as that induced in the other two patients by the purely local injection of cortisone. In the right leg pitting œdema followed the injection of hyaluronidase, and on two occasions the bulk of the plaques was decreased by aspirating some of the fluid from the pitting areas. The improvement, however, was transient, and if no aspiration was made the plaque ceased to pit within two or three days and became indistinguishable from its original state.

On the supposition that the pretibial myxœdema and exophthalmos might be different manifestations of the same process, 1 ml. of the suspension containing 25 mg. of cortisone was injected by Dr. G. I. Scott into the retro-ocular tissues of cases 1 and 2 on the last day of their treatment with systemic cortisone. The only result was a temporary increase in the chemosis, and there was no improvement in the proptosis as measured by the exophthalmometer.

Conclusions

Intramuscular therapy with large doses of cortisone produced slight but definite improvement in the pretibial myxœdema of two patients and this improvement was more striking with the addition of local infiltration of cortisone. Local infiltration without any systemic therapy was much less effective in all three cases. We are unable to explain the mechanism by which this combined treatment with cortisone proved beneficial.

Although our limited observations suggested that it might be possible to eradicate pretibial myxœdema by long-continued treatment with systemic and local injections of cortisone, such an attempt was thought unjustifiable (1) because of the large amount of cortisone required, (2) because of the danger of the side-effects of cortisone used in such high dosage and for so long, and (3) because of the tendency of the condition to relapse when treatment was stopped.

The use of hyaluronidase in this condition has already been reported by Rosman (1950), and our studies confirm his opinion that this form of treatment is of no permanent value; further, the effect of cortisone is not enhanced by mixing it with hyaluronidase.

Although the association of exophthalmos with pretibial myxœdema has often been described, we have not been able to find any reference to gross finger clubbing in such cases. Since our interest in this association was aroused by its occurrence in our first two patients we have heard of two other patients in whom the same triad of signs was present. The reason for this association is unknown, but Coope (1948) mentions that clubbing of the fingers develops occasionally in myxœdema after thyroidectomy.

Summary

Three cases of pretibial myxœdema are described. In two of them exophthalmic ophthalmoplegia was associated with gross clubbing of the fingers. This triad does not seem to have been described before.

The effects of treatment with cortisone are described. Combined systemic and local injections were followed by definite but temporary improvement in the pretibial myxœdema. Local treatment alone was less effective. Nevertheless reasons are given why long-continued combined treatment is unjustifiable.

Retro-ocular injections of cortisone in two cases failed to improve the exophthalmic ophthalmoplegia.

Our thanks are due to Prof. D. M. Dunlop for permission to publish these observations on patients under his care and for his help and advice in the preparation of this paper; to Dr. G. I. Scott for undertaking the retro-ocular injections of cortisone; to Dr. P. Hannay for asking us to treat case 2; to Sister E. Mutch for her assistance in the treatment of all three cases; and to the photomicrography unit of the University of Edinburgh for the photographs.

REFERENCES

Chandler, G. N., Hartfall, S. J. (1952) *Lancet*, i, 847.
Coope, R. (1948) Diseases of the Chest. Edinburgh; p. 60.
Rosman, D. (1950) *N.Y. St. J. Med.* **50**, 1939.
Trotter, W. R., Eden, K. C. (1942) *Quart. J. Med.* **11**, 229.
Vilanova, X., Canadell Vidal, J. M. (1949) *J. clin. Endocrinol.* **9**, 883.
Watson, E. M., Pearce, R. H. (1947) *Amer. J. clin. Path.* **17**, 507.
Watson-Williams, P. (1895) *Clin. J.* **7**, 93.

CORTICOTROPHIN TREATMENT IN POLYNEURITIS WITH PERIARTERITIS NODOSA

L. A. LIVERSEDGE
M.B., B.Sc. Manc., M.D. Duke, M.R.C.P.
LECTURER IN NEUROLOGY IN THE UNIVERSITY OF MANCHESTER

H. M. LEATHER
M.B. Birm., M.R.C.P.
MEDICAL REGISTRAR, MANCHESTER ROYAL INFIRMARY

MANY theories have been put forward to explain the acute polyneuritis originally called the Guillain-Barré syndrome (Guillain et al. 1916) and now passing under various names such as infective polyneuritis, infective neuronitis, and polyradiculitis. The view has gained favour recently that it is allergic in origin, and a number of workers have therefore treated it with cortisone or corticotrophin (A.C.T.H.). Favourable results have been reported (Newey and Lubin 1953, Blood et al. 1953).

The association of peripheral neuropathy with periarteritis nodosa is well recognised (Kernohan and Woltman 1938, Miller et al. 1949, Summers 1950), the neural disturbance varying from a localised asymmetrical mononeuritis to a diffuse symmetrical polyneuritis. Periarteritis is said to respond at times to treatment with corticotrophin and may reasonably be regarded as a manifestation of hypersensitivity. Hence it is possible that the associated polyneuritis is also allergic in origin.

There are as yet few reports of the use of corticotrophin in the treatment of the Guillain-Barré type of polyneuritis occurring with periarteritis. The following case

is therefore of interest in its therapeutic and ætiological implications.

Case-record

A woman, aged 58, had rheumatic fever in 1910, at the age of 16, with possible involvement of the heart. Subsequently she remained well until 1940, when joint pains and swellings affected mainly the larger joints. These pains recurred intermittently during succeeding years but were never disabling. In July, 1952, however, she developed rather more severe pains and swellings in the knees and hands. She was seen then at the Manchester Royal Infirmary, where examination revealed slight limitation of movements of the hips and knees, swelling of the interphalangeal joints of the hand, and a soft early diastolic murmur down the left border of the sternum. A full blood-count was normal, but the erythrocyte-sedimentation rate (E.S.R.) was 44 mm. (Wintrobe) in the first hour. Her symptoms were relieved after three weeks' treatment with analgesics and physiotherapy. In February, 1953, an attack of postprandial dyspepsia, to which she had been liable for thirteen years, led to a barium-meal examination, which revealed a deformed duodenal cap but no actual ulcer. At this time a blood-count showed red cells 4,310,000 per c.mm. and Hb 64%. Medical treatment relieved the dyspepsia, and oral iron therapy increased the Hb to 82% in six weeks. The patient's general health seemed to her to deteriorate, however, and she began to lose weight. On May 15 she developed a severe aching pain across the middle of her back, with an associated numbness of both feet. This numbness spread up the calves within a few hours, and the leg muscles became painful. Next day she felt generally ill, the pain was worse, and the numbness had reached her knees. She was admitted on May 17 to the Manchester Royal Infirmary under the care of Dr. N. Kletts.

On examination the patient appeared ill and in great pain. Her temperature was 98°F and blood-pressure 200/100 mm. Hg. A diastolic murmur was heard down the left sternal border. Rheumatoid changes in the hands, effusions into both knees, slight œdema of the ankles, and slight epigastric tenderness were present. The liver was palpable. There were no abnormal motor signs in the central nervous system. The tendon-reflexes were absent; plantar reflexes could not be elicited. There was symmetrical loss of all forms of sensation below the knees.

Investigations.—A catheter specimen of urine showed much albumin, some epithelial cells and red cells, but no porphyrins. A blood-count showed red cells 4,400,000 per c.mm., Hb 80%, white cells 9200 per c.mm. (polymorphs 70·5%, lymphocytes 25%, monocytes 4%, eosinophils 0·5%). The E.S.R. was 54 mm. in the first hour. Radiographs of the dorsal and lumbar spine were normal. Lumbar puncture produced cerebrospinal fluid (C.S.F.) under a pressure of 120 mm. H_2O, dynamics normal and containing 1 lymphocyte per c.mm., protein 100 mg. per 100 ml., and enough globulin to render it opalescent. The Lange curve was normal. The Wassermann reaction was negative in blood and C.S.F. The blood-urea level was 50 mg., the serum-albumin 3·3 g., and the serum-globulin 3·6 g., per 100 ml.; thymol turbidity 5·1 units, and alkaline phosphatase 13·5 King-Armstrong units. A pyrocate-tolerance test was normal.

Progress.—After two days the back pain eased. The patient's temperature reached 99°F occasionally. Six days after admission she woke to find that she could not move her legs, and that the fingers of both hands were numb. Re-examination revealed complete flaccid paralysis of both legs, in addition to the absent reflexes and the sensory loss previously noted. Calf tenderness was now pronounced. The right posterior tibial artery and the dorsal arteries of the right foot could not be palpated, and the right foot was much cooler than the left. Muscle biopsy (from the left pectoral) revealed no abnormality.

Diagnosis.—Despite the negative biopsy result, the clinical evidence in favour of a diagnosis of periarteritis nodosa seemed overwhelming. The multiple systemic involvement included hypertension, joint changes of rheumatoid type, œdema, albuminuria, anæmia, raised blood-urea level, raised E.S.R., evidence of arterial blockage, an enlarged liver with alteration of the serum-protein levels, and peripheral neuritis.

Treatment.—In view of the favourable reports of treatment cited above there was a double indication for corticotrophin therapy. On May 29, therefore, five days after the onset of the severe paralysis, treatment with intramuscular corticotrophin gel. 20 mg. b.d. was begun. Within twenty-four hours the calf tenderness had disappeared, the patient could move her toes and ankles, and the sensory impairment had receded to the ankles. Absolute constipation, which had resisted treatment for fourteen days, was relieved spontaneously in forty-eight hours. By the sixth day of treatment the patient walked a few steps, and on the tenth day sensory impairment was limited to the tips of the fingers and toes. At this time she could walk unaided for fifty yards. The effusions disappeared, but the occlusion of the arteries of the right foot persisted. Treatment was discontinued after thirty days, and on July 17 she was discharged in excellent health.

Re-examination on Nov. 11 showed that her excellent condition was maintained, and by this time all the tendon-jerks could be elicited though they were sluggish.

During the course of corticotrophin treatment the patient showed a good eosinophilic response. Certain interesting changes took place in addition to the other accessory clinical findings:

	Days after beginning treatment			
	0	*10*	*21*	*35*
E.S.R.	52	10	13	..
C.S.F. protein (mg. per 100 ml.)	100	..	..	75
Serum-albumin (g. per 100 ml.)	3·3	3·1	3·4	4·0
Serum-globulin (g. per 100 ml.)	3·6	2·5	2·5	2·2
White-cells per c.mm.	10,800	16,600	9800	8200
Polymorphs %	71	84	74	73

The reversion of the serum-protein levels to the normal albumin/globulin ratio, the reduction of the E.S.R., and the decrease in the amount of C.S.F. protein follow the clinical improvement very closely indeed.

Discussion

The course of an untreated polyneuritis is rather variable, which fact makes assessment of treatment difficult. In the present case, however, the immediate relief of symptoms, which in the previous two weeks had been developing steadily, coupled with the parallel alteration in certain of the accessory findings, suggests a direct benefit attributable to the corticotrophin. Blood et al. (1953) reported amelioration of severe symptoms within four days of beginning treatment in their case, and Newey and Lubin (1953) report demonstrable improvement within thirty minutes of the conclusion of an eight-hour intravenous infusion of corticotrophin 25 mg. It is too early to judge the final effect of this form of therapy, because a relapse may yet occur.

The association of the polyneuritis with a diffuse collagen disease—the diagnosis of periarteritis nodosa appears inescapable—raises the question of the pathological process underlying the nerve changes. Lovshin and Kernohan (1949), Miller et al. (1949), Macken et al. (1951), and Sahlgren and Hofman-Bang (1950) all describe pathological changes in the vasa nervorum and attribute the neural lesion to ischæmia of the nerves. The symmetrical peripheral distribution of the signs and symptoms is usually attributed to the fact that the longest neurones (running to the periphery) are the most susceptible to the ischæmia. Macken et al. state that the occluded vessels can be recanalised. The explanation of the rapid recovery in the present case may therefore lie in the rapid resolution of the subintimal proliferation in the vasa nervorum and immediate relief of the ischæmia. On the other hand, if one regards this symmetrical peripheral neuritis as another manifestation of hypersensitivity, the response to corticotrophin might be attributed to an immediate reversal of biochemical and osmotic changes in the neurones. However, as Miller et al. (1949) point out, perhaps in infective polyneuritis the primary lesion is vascular and not neuronal.

Summary

A case of severe symmetrical polyneuritis with *dissociation albumino-cytologique* of the Guillain-Barré type occurring during the course of periarteritis is described. Both conditions responded rapidly to treatment with corticotrophin.

It is suggested that the process underlying this and possibly other forms of polyneuritis is that of tissue hypersensitivity leading either to ischæmia or to more

complex biochemical changes in the neurones. These changes are susceptible of immediate reversal, as shown by the rapid response to corticotrophin in the present case.

We are indebted to Dr. N. Kletts for permission to record this case and for helpful criticism in preparation of the paper.

REFERENCES

Blood, A., Locke, W., Carabasi, R. (1953) *J. Amer. med. Ass.* **152**, 139.
Guillain, G., Barré, J. A., Strohl, A. (1916) *Bull. Soc. méd. Hôp. Paris*, **40**, 1462.
Kernohan, J. W., Woltman, H. W. (1938) *Arch. Neurol. Psychiat., Chicago*, **39**, 655.
Lovshin, L. L., Kernohan, J. W. (1949) *Proc. Mayo Clin.* **24**, 48.
Macken, J., Vandael, J., Tverdy, G., van Bogaert, L. (1951) *Act. neurol. psychiat. belg.* **51**, 217.
Miller, H. G., Pulvertaft, R. J., Platt, R. (1949) *Proc. R. Soc. Med.* **42**, 497.
Newey, J. A., Lubin, R. I. (1953) *J. Amer. med. Ass.* **152**, 137.
Sahlgren, E., Hofman-Bang, E. (1950) *Nord. Med.* **44**, 1717.
Summers, V. K. (1950) *Lancet*, i, 1148.

MOUTH-PIECE FOR USE WITH PNEUMOFLATOR IN RESPIRATORY PARALYSIS

R. ATWOOD BEAVER
M.A., B.M. Oxfd, F.F.A. R.C.S.
SENIOR ANÆSTHETIST

R. W. GILLIATT
B.M. Oxfd, M.R.C.P.
HOUSE-PHYSICIAN

THE NATIONAL HOSPITAL FOR NERVOUS DISEASES, QUEEN SQUARE, LONDON

THE simple mechanical pneumoflator designed by one of us (Beaver 1953) was introduced to provide positive-pressure respiration during anæsthesia and in cases of severe respiratory paralysis due to poliomyelitis. For this purpose the pneumoflator has been used successfully in conjunction with an endotracheal tube or with an anæsthetic mask of the self-sealing type (Goorney 1953).

In acute poliomyelitis with bulbar or spinal respiratory failure expert supervision of positive-pressure respiration is obviously necessary, but in chronic or slowly recovering spinal paralysis the problem is rather different. Such patients are best nursed in the conventional box respirator, and the rôle of positive-pressure inflation is then to permit severely paralysed patients to be withdrawn from the respirator long enough for nursing attention and physiotherapy to be given efficiently. An ingenious positive-pressure hood for use with the Both respirator has recently been designed for this purpose (Christie and Esplen 1953).

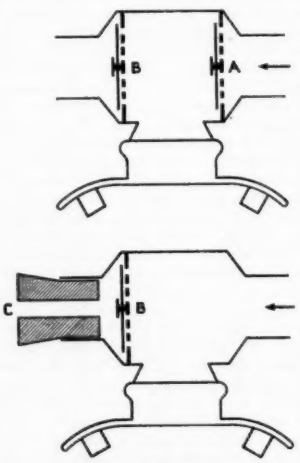


Fig. 1—Standard Siebe Gorman mouth-piece above, modified mouthpiece below. For explanation of lettering see text.

For these long-term respirator cases positive-pressure inflation through an anæsthetic mask has the disadvantage that it requires the presence of a doctor or of a specially trained nurse to ensure a good fit of the mask on the face and to maintain an adequate ventilating pressure without obstruction of expiration, and it is not always easy to provide adequate supervision for patients requiring positive pressure four or five times a day. For this reason a simple non-adjustable mouth-piece has been improvised for use with the pneumoflator which makes it possible for assisted respiration to be given safely by the nurses.

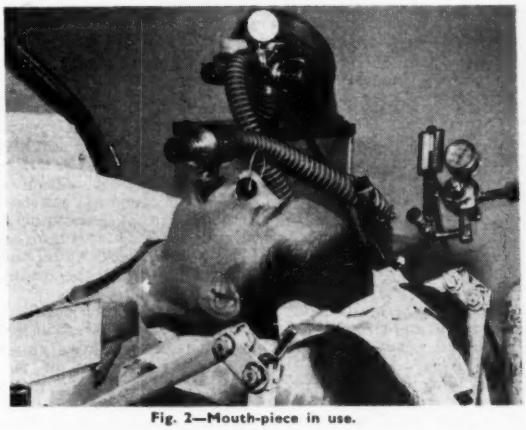


Fig. 2—Mouth-piece in use.

The mouth-piece (fig. 1) is adapted from the standard Siebe Gorman valved mouth-piece (catalogue code-word 'Exnick'), which is gripped in the patient's teeth, the nose being clipped (fig. 2). The inspiratory valve (A) of the mouth-piece is removed so that no mechanical barrier exists between the pneumoflator and the mouth, but the expiratory valve (B) is retained, and, to provide suitable positive pressures during the compression phase, a rubber cork (C), bored to leave an air outlet of $^1/_4$ or $^5/_{16}$ inch in diameter, is fitted into the outlet. Without further adjustment the pneumoflator will then deliver through the mouth-piece air or an air/oxygen mixture at a pressure of 10–20 cm. of water during compression. No rebreathing takes place, and with an outlet bore of the size mentioned there is no appreciable resistance to expiration.

By slight variation in the bore of the outlet hole in the rubber cork, or by the insertion of a short length of glass tubing to reduce its internal diameter, the positive pressure produced can be varied between 10 and 20 cm. of water without appreciable resistance to expiration and, with a suitable series of corks, pressure can be slightly reduced at weekly or monthly intervals according to the degree of recovery of spontaneous respiration.

With this extremely cheap and simple adaptation of a standard piece of equipment positive-pressure respiration by pneumoflator becomes a safe routine procedure, making it possible to maintain a severely paralysed patient out of a box respirator for long periods without expert supervision. At first a patient may be quickly tired by the effort of gripping the mouth-piece, but within a few days this no longer happens, and the patient develops great confidence in the apparatus, knowing that, if the bite on the mouth-piece is maintained, no external leak or maladjustment can arise. Because the patient is required to grip the mouth-piece firmly with his lips and teeth, it is only suitable for those with chronic spinal paralysis without bulbar involvement.

In one patient with severe spinal paralysis (vital capacity less than 250 c.cm.) the pneumoflator and mouth-piece have been used four or five times each day for many weeks, with a daily total of two or three hours of positive-pressure breathing. This has allowed a standard of nursing and physiotherapy far in advance of that which could be contemplated if the patient's spontaneous respiration were relied on when out of the box respirator.

We particularly wish to thank the many nurses whose coöperation has made routine positive-pressure breathing possible.

REFERENCES

Beaver, R. A. (1953) *Lancet*, i, 977.
Christie, A. B., Esplen, J. R. (1953) *Ibid*, p. 1027.
Goorney, A. B. (1953) *Ibid*, p. 422.

Reviews of Books

Approach to General Practice

R. J. F. H. PINSENT, M.A., M.D. Camb. Edinburgh: E. & S. Livingstone. 1953. Pp. 166. 12*s*.

THIS excellent book answers well to its title. In it the intending or actual recruit to general practice will find a clear picture of his future professional life. Dr. Pinsent is never vague or off the ground. He writes as a thoughtful, experienced family doctor, conscious of the duties and opportunities of general practice but not blind to the frustrations and annoyances. Established practitioners who read the book will gain an insight into the methods and outlook of a colleague, and specialists a view into what is, unhappily, becoming for many of them *terra incognita*.

The chapters on The Surgery, The Doctor's Office, and Treatment in General Practice are full of useful facts and practical suggestions. Others, such as those on The Mind of the Doctor, The Education of the Patient, and The Future of General Practice, are more reflective. Clear-headedness and reason in all dealings with patients is one of Dr. Pinsent's main themes. The doctor must not deceive himself by pandering to some patients' woolly conceptions; he must labour to get *their* heads clear too: "no placebo under 40 and no tonic at all."

The author is on the whole optimistic about the future of general practice, which he believes will be linked inseparably with that of its College. He sees a future for the "general-nursing practitioner" who might "be admitted into junior partnership with the doctor himself."

Surgery of Repair as Applied to Hand Injuries

B. K. RANK, M.S. Melb., F.R.C.S., F.R.A.C.S., plastic surgeon, Royal Melbourne Hospital; A. R. WAKEFIELD, M.S. Melb., F.R.C.S., F.R.A.C.S., plastic surgeon, Children's Hospital, Melbourne. Edinburgh: E. & S. Livingstone. 1953. Pp. 256. 40*s*.

RECOGNITION of the importance of hand injuries is slowly spreading, and some hospitals now have special departments for dealing with these cases. This book will appeal not only to surgeons practising in this special field, but to all general surgeons whose emergency work is sprinkled with hand injuries.

The first part describes the social significance of the problem, arrangements for the reception of cases, the special anatomy of the hand, and the clinical examination required. The second part deals with primary treatment, which is the most important of all; the third part with intermediate treatment; and the fourth part with secondary treatment. The fifth and last part describes the special features of the burnt hand, hand injuries in children, and hand prostheses. The whole book is illustrated with good photographs of actual cases.

Only a knowledge of plastic surgery can save portions of the hand and fingers which would otherwise be lost, and the section dealing with reconstructive methods applicable to the more severely injured hand is excellent. The section on tendon repairs, which are notoriously difficult, is extremely good. Mr. Rank and Mr. Wakefield clearly explain the methods of repair they have found most satisfactory, and their illustrations show the good results that can be obtained.

Clinical Endocrinology

LEWIS M. HURXTHAL, M.D., F.A.C.P., head, department of internal medicine, Lahey Clinic, Boston; NATALIJA MUSULIN, M.D., staff of Cooper Hospital, Camden, N.J. Philadelphia and London: J. B. Lippincott. 1953. 2 volumes. Pp. 1600. £9 9*s*.

THE standard work on clinical endocrinology has not yet appeared, nor can it be written until the present phase of rapid advance in this field gives way to a period of consolidation and consideration. Meanwhile we are offered on the one hand rather lightweight introductions to what is generally regarded as a difficult subject; and, on the other, unreadable but indispensable works of reference. This book falls into the latter category, but the authors have gone one step further than their predecessors: they intend this to be a true work of reference and have virtually excluded continuous prose. All the material (and it is abundant) is presented in outline form as a series of lists painstakingly and intelligently classified, backed by copious references both to early and to recent work, and profusely illustrated. This is a synopsis rather than a textbook, useless and possibly dangerous to anyone not working in the field, but invaluable as a labour-saving device to everyone who practises endocrinology, and particularly to those engaged in clinical research. Here and there tentative results and rather speculative hypotheses seem to be given equal weight with well-established facts; the references listed must therefore be used with some discrimination.

Transactions of the 4th Meeting of the International Society of Geographical Pathology

Editors: H. H. BETZ and FRÉD. C. ROULET. Basle and New York: S. Karger. 1953. Pp. 396. Sw. 46.80.

THE *Schweizerische Zeitschrift für allgemeine Pathologie und Bakteriologie* have devoted the whole of part 3 of their current volume to a detailed report of the transactions of the 4th meeting of the International Society of Geographical Pathology held at Liège on July 15–18, 1952.

The conference was concerned almost exclusively with infective hepatitis, and included, in addition to individual communications from distinguished investigators, a series of special reports based on the results of a world-wide questionary. Among these are a brief summary of the epidemiology of virus hepatitis, by MacCallum, and a report by Sherlock on the biochemical aspects of acute hepatitis, based on replies received from 22 different countries as far apart as Chile and Japan, Finland, and South Africa. The report contains 49 papers of consistently high standard, and brings together not only the clinical and experimental findings of recent years, but much information on related hepatic diseases such as epidemic icterus in French Equatorial Africa, leptospirosis, and amœbic and parasitic hepatitis. The value of the geographical approach to the study of the disease is emphasised by May's outline of the exciting medical programme of the American Geographical Society.

Textbook of Physiology and Biochemistry (2nd ed. Edinburgh: E. & S. Livingstone. 1953. Pp. 1002. 50*s*.).—Physiology enters more and more into modern medical thought, and a textbook on the subject, with two professors of physiology (Prof. George H. Bell and Prof. J. Norman Davidson) and a distinguished clinician (Prof. Harold Scarborough) as its authors, raises high hopes. Unfortunately, they are not quite fulfilled in this book, since many sections on fascinating subjects have somehow been allowed to make dull reading. Normal phenomena acquire meaning by contrast with the pathological: hence the chapters on vitamins and endocrinology are much more alive than most of the other sections. The circus-movement theory of auricular fibrillation has been superseded by an account of Prinzmetal's recent work, but unfortunately a good deal of the rest of the book is not as up to date as this. The introductory chapters on biochemistry are more chemical than physiological, and it is difficult to see how the medical student can achieve a reasonable synthesis from this disjointed mode of presentation. Needlessly complex accounts are given of matters which could be expressed as very simple principles. A new orientation of teaching in the direction of human physiology is a crying need in the strenuous curriculum of the medical student today: and this book goes a little way—but only a little way—to meet that need. More courage is required to break with the dusty past and provide the student with a stimulating and vivid account of matters which should become a permanent part of his intellectual equipment. But the book is orthodox, and the student who bases his studies upon it will no doubt pass the appropriate examinations.

Supplement to the S.F.A. Catalogue of Medical Films (London: Harvey & Blythe. 1953. Pp. 55. 6*s*.).—The *S.F.A. Catalogue of Medical Films* appeared in 1952, but already some 260 candidates have applied for inclusion. They are well accommodated in this supplement, with the help of which the complete catalogue now gives information on over 1200 medical films. The supplement should be used with the main catalogue, which contains guidance on the way to use it and a key to abbreviations.

'washed out'

defines a common deficiency

The water-soluble vitamins are not stored by the body to any great extent. Any excess above immediate needs is, in a real sense 'washed out' from the system; so it is easy for a deficiency to arise—showing itself in an indefinite lassitude and fatigue, and often accompanied by sub-clinical skin and digestive disorders. Just as easily, the condition can be corrected with Nicorbin, which presents the four most important water-soluble vitamins in convenient tablet form.

Q: How to avoid the glossitis that sometimes follows treatment with oral antibiotics?

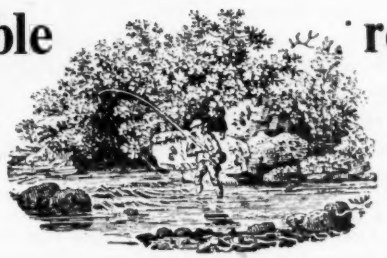
A: Advise 3 to 6 Nicorbin Tablets, three times a day.

NICORBIN tablets
Trade mark
In bottles of 50 and 500

Each tablet contains: aneurine hydrochloride (vitamin B_1), 1 mg.; riboflavine, 1 mg.; nicotinic acid (P.P. factor), 10 mg.; ascorbic acid (vitamin C), 25 mg.

Research Laboratories: Manufacturers of medical products and foods. Agents or associate companies in almost every country in the world.
GLAXO LABORATORIES LIMITED, GREENFORD, MIDDLESEX, ENGLAND

Pleasurable relaxation



In addition to the established use of Myanesin Elixir in the treatment of neurological conditions associated with muscular rigidity and tremor it has now been successfully employed in the relief of psychological states characterised by anxiety and tension. Amer. J. Med. Sci., 1950, 220, 23 describes a group of patients in which anxiety states and obsessional conditions were present and which following the administration of mephenesin, the active constituent of Myanesin Elixir, obtained complete relaxation. Best results occurred in anxiety states, however chronic, and 47 out of 50 patients treated for this condition improved.

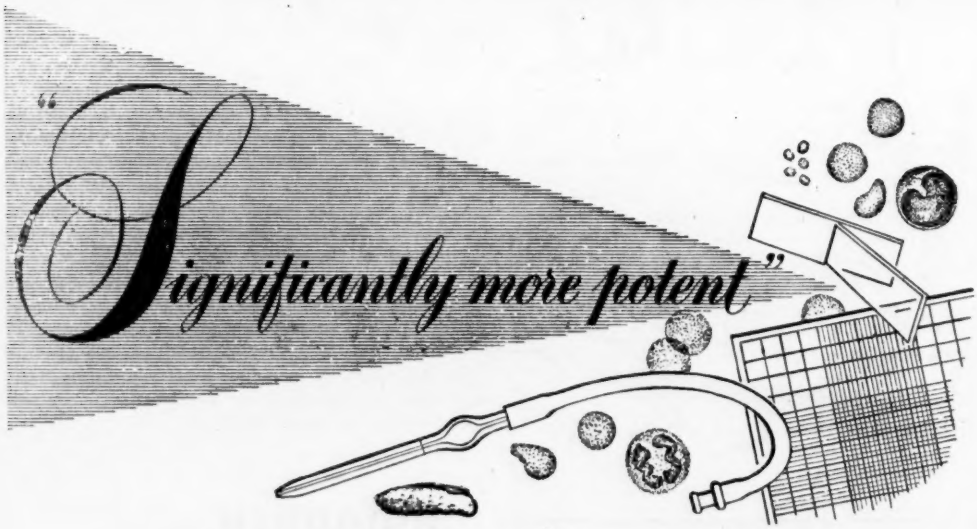
Dosage of from ½ to 1 tablespoonful, one to six times daily, is suggested.

'MYANESIN' ELIXIR

Containing 1 gramme mephenesin in each tablespoonful. Bottles of 8 fl. oz. 4/6; 40 fl. oz. 19/8.
Also available 'Myanesin' Tablets each containing 0.5 gramme mephenesin. Bottles of 50 at 6/10.
Basic N.H.S. prices.

THE BRITISH DRUG HOUSES LTD. (Medical Department) LONDON N.1

Myn/b/2



LIVER INJECTION U.S.P. - *20 MICROGRAMS*

NOW AVAILABLE IN GREAT BRITAIN

Lederle

LEDERLE'S undisputed reputation for superior Liver Extracts stems from a quarter of a century's experience in liver-extract research. Their latest liver extract—Liver Injection U.S.P.—20 Micrograms—described in a recent British study as "significantly more potent" than other extracts* is now available to doctors in Great Britain. Liver Injection U.S.P.—20 Micrograms *Lederle* contains 20 μg. of vitamin B_{12} activity in each cc. and is especially suited to the prolonged treatment of pernicious anaemia because of its small volume, high concentration of anti-anaemic substance and low concentration of solids—qualities which ensure minimum patient discomfort and maximum therapeutic effect. In addition it is outstandingly useful in everyday practice for hepatic and metabolic stimulation.

*A review of pernicious anaemia patients on liver extract maintenance over several years showed a deterioration in their red-cell count and clinical conditions. A change to Solution Liver Extract Concentrated *Lederle* (now known as Liver Injection U.S.P.—20 Micrograms) brought about striking improvement in 20 of the 25 patients who had been maintained on extracts, as well as in 3 patients who had neglected their treatments. The author concluded from the definite response to the change of treatment that the *Lederle* Extract was significantly more potent than those previously used.

Lancet **(1950) 1, 1064**

Available in boxes of 3 x 1 cc. vials

Literature on request

LEDERLE LABORATORIES DIVISION

Cyanamid Products Ltd

BUSH HOUSE · ALDWYCH · LONDON, W.C.2 · TEMPLE BAR 5411

THE LANCET

LONDON: SATURDAY, DEC. 12, 1953

Sources of Congenital Heart-disease

DEVELOPMENTS in the surgical treatment of congenital heart-disease have led to closer study of its prevalence and causation. The true prevalence is unknown, but the observation by MCMAHON, MCKEOWN, and RECORD [1] that, among nearly two hundred thousand children born in Birmingham between 1940 and 1949, 3·2 per 1000 were affected suggests that it is higher than has been supposed. Probably even this estimate is too low; for it omits patients who lived for more than eleven years without needing medical attention. Furthermore, CAMPBELL and KAUNTZE [2] now claim a congenital origin for some cases of aortic stenosis—a lesion still generally regarded, at least in young people, as rheumatic. Their reasons are chiefly clinical: 40 cases, 31 of which they believed to be valvular because of radiographic evidence of calcification, included 20 with characteristic signs in infancy or early childhood, when rheumatism is rare, and a further 17 with such signs before adolescence. In 5 of these patients there was a history of rheumatism, but only in 1 did this precede recognition of a murmur. Again, there was no evidence of mitral stenosis in any of these cases; nor was the clinical course like that of rheumatic heart-disease. Other signs suggesting a congenital origin were poststenotic dilatation of the aorta, soft aortic diastolic murmurs, and evidence of cardiac hypertrophy with little enlargement of the heart. Cardiac function was good, but some of the patients died suddenly. At necropsy in such cases KARSNER and KOLETSKY [3] found inflammatory lesions; but CAMPBELL and KAUNTZE suggest that these may be secondary and should be reassessed in the light of the clinical evidence.

Almost all congenital malformations of the heart are thought to result from arrested cardiac development in the early months of intra-uterine life. Even isolated defects such as infundibular pulmonary stenosis and subaortic stenosis can be explained in this way; and the same explanation probably holds also when the obstruction is at the level of the valves, despite some pathological evidence for the earlier hypothesis of fœtal endocarditis.[4] The cause of the developmental failure is not so clear, but both abnormalities of the uterine environment and inherited predisposition are known to be important. The classical observations of GREGG,[5] who found 44 cases of congenital heart-disease of one kind or another in 78 children with congenital cataract following maternal rubella in early pregnancy, have been amply confirmed. SWAN et al.[6] found 21 cases among the children of 61 mothers who had had rubella in the first three months of pregnancy, and similar observations have since been described repeatedly.[7] There is nothing to suggest that other virus infections, such as measles and poliomyelitis, have the same effect; possibly the reason is that these kill the fœtus. Patency of the ductus arteriosus seems to be associated with fœtal distress at birth, suggesting that prolonged anoxia may play a part in its causation. The children of women who have had repeated stillbirths or miscarriages seem to be rather more apt than others to have a congenital disorder of the heart. Inherited characteristics are always difficult to prove unless they behave as dominants or produce common or benign lesions. The association of heart-disease with other inherited defects, including mongolism and arachnodactyly, is well known; and sometimes more than one member of a family has a congenital cardiac lesion. COURTER et al.[8] found reports of 63 families in which more than one member had any of several types of lesion, but particularly atrial septal defect. CAMPBELL [9] found that of 110 consecutive patients 7 had affected siblings—more than would be expected by chance. In Birmingham MCKEOWN et al.[10] investigated the families of 431 cases drawn from 425 fraternities, and found 6 affected among 342 siblings born after the propositus; this is a proportion of 18 per 1000, which is considerably greater than that in the general population. They could not estimate the likelihood of siblings having similar lesions, but on the whole thought that they tended to do so. The proportion of affected parents was probably no greater than that in the adult population. Two first-cousin marriages each produced a child with dextrocardia (thus supporting COCKAYNE'S [11] view that visceral transposition is due to an inherited recessive gene); while one second-cousin marriage produced a child with œsophageal atresia and cor biloculare.

This rather incomplete picture would perhaps be made clearer by a study of twins; but there can be little doubt of the importance of genetic as well as of environmental factors. The prognosis for patients with congenital heart-disease is bad; in the Birmingham series, of every 10 affected children only 3 reached the age of ten years. Surgery has improved the chances of these patients; but even so the outlook is gloomy enough to make us want to know more about causation.

Antibiotic Enterocolitis

IN this issue Dr. GARDNER reports two cases in which severe and ultimately fatal enteritis unexpectedly and suddenly developed during the administration of aureomycin or oxytetracycline (terramycin) to patients whose primary illness was unrelated to the gastro-intestinal canal. In both cases pure and abundant growths of antibiotic-resistant, coagulase-positive staphylococci developed in cultures from the intestinal and respiratory tracts; the gram-negative bacilli characteristic of the normal fæcal flora were conspicuously absent. In the U.S.A. and France

1. McMahon, B., McKeown, T., Record, R. G. *Brit. Heart J.* 1953, **15**, 121.
2. Campbell, M., Kauntze, R. *Ibid*, p. 179.
3. Karsner, H. T., Koletsky, S. Calcific Disease of the Aortic Valve. Philadelphia, 1947.
4. Farber, S., Hubbard, J. *Amer. J. med. Sci.* 1933, **186**, 705.
5. Gregg, M. M. *Trans. opt. Soc. Aust.* 1941. **3**, 35.
6. Swan, C., Tostevin, A. L., Moore, B., Mayo, H., Black, G. H. B. *Med. J. Aust.* 1943, i, 409; *Ibid*, 1943, ii, 201.
7. Albaugh, C. H. *J. Amer. med. Ass.* 1945, **129**, 715. Record, R. G., McKeown, T. *Brit. Heart J.* 1953, **15**, 376.
8. Courter, S. R., Felson, B., McGuire, J. *Amer. J. med. Sci.* 1948, **216**, 501.
9. Campbell, M. *Quart. J. Med.* 1949, **18**, 379.
10. McKeown, T., McMahon, B., Parsons, C. G. *Brit. Heart J.* 1953, **15**, 273.
11. Cockayne, E. A. *Quart. J. Med.* 1934, **7**, 479.

similar cases have been reported,[1–4] and clearly we must examine the facts surrounding this dangerous complication of antibiotic therapy.

Oxytetracycline and aureomycin are the antibiotics especially implicated, but FAIRLIE and KENDALL[2] observed the same type of enteritis in patients given a combined course of penicillin and dihydrostreptomycin by intramuscular injection. Obviously there is need for discretion in the choice of antibiotic, to prevent postoperative infection or to treat an established infection, where the patient's general condition is much reduced either by severe or long-continued infection or by such states as malnutrition and chronic alcoholism. For example, weighing risk against likely gain, the powerful bactericidal effect of streptomycin and penicillin is essential for the successful treatment of endocarditis caused by *Streptococcus fæcalis*; since the infection is not otherwise curable the hazard of this particularly powerful combination is justified. But it is doubtful whether such a combination can justifiably be given to prevent postoperative infection. The "broad-spectrum" antibiotics—aureomycin, oxytetracycline, and chloramphenicol—have obvious attractions as prophylactics in that they are given by mouth and protect against so many organisms, particularly those of the intestinal tract. But these drugs rather often provoke some gastro-intestinal disturbance, and it is a mistake to suppose that the symptoms are always either mild or transient. At the recent Washington symposium on antibiotics[5] the discovery of a new antibiotic, tetracycline ('Achromycin'), was announced. The chief advantage claimed for it is that it causes much less nausea, vomiting, and diarrhœa than either of its near relatives, aureomycin (chlortetracycline) or oxytetracycline, with which it shares many properties. If this is confirmed the new drug will indeed be welcome. Meanwhile in choosing prophylactics it should not be forgotten that succinylsulphathiazole by mouth and penicillin by injection provide good cover with little risk, and that moderate dosage over a short period is likely to be effective. Altogether it seems that much current practice is based on unduly pessimistic estimates of the risk of sepsis complicating operations, with the result that patients are being needlessly exposed to real dangers by over-insurance against complications which are improbable and which can readily be controlled by prompt treatment with antibiotics. There can be no substitutes for a sound aseptic technique and for watchful care during convalescence; these will contribute far more to the safety and welfare of patients than a carefree enthusiasm for hearty doses of the latest antibiotic. Before the era of sulphonamides and antibiotics sepsis had become a relatively rare complication of deliberate operations.

We normally live on peaceful terms with our intestinal bacteria, and it seems almost ungracious and certainly naïve to disturb their balance suddenly in preparing for a surgical operation. We cannot by giving known antibiotics eliminate all forms of living micro-organism from the intestinal tract, and we must expect that suppression of the species sensitive to the chosen antibiotic will favour proliferation of those which are insensitive. We still know little of the complicated influences governing the ecology of the bacterial population of the intestine, but common sense suggests that it may be best for the patient to weather a surgical crisis in company with the organisms with which he has come to terms. Perhaps staphylococci are not the sole cause of the enterocolitis reported by Dr. GARDNER and others, but many coagulase-positive staphylococci produce enterotoxin and may give rise to sharp outbreaks of food-poisoning. Owing to our own activities, staphylococci in hospitals are now largely resistant to the antibiotics in general use, and it has been suggested that erythromycin, as it becomes available here, might be reserved for cases of staphylococcal enteritis. Such restraint, however, would not be in keeping with the general popularity of new antibiotics, and in any event erythromycin-resistant staphylococci appear very readily. In the Washington symposium,[5] LEPPER referred to a hospital in which after five months' use of erythromycin the carrier-rate of highly resistant strains reached 75%. The remedy seems to involve, firstly, educating ourselves to use antibiotics sparingly, taking full advantage of other means of preventing surgical sepsis, and, secondly, undertaking careful and critical studies of the normal intestinal bacteria and of the influences, including antibiotics, which determine important changes in this richly varied population.

1. *Minn. Med.* 1953, **36**, 63.
2. Fairlie, C. W., Kendall, R. E. *J. Amer. med. Ass.* 1953, **153**, 90.
3. Terplan, K. *Amer. J. Path.* 1953, **29**, 595.
4. Janbon, L., Bertrand, J., Roux, J., Salvaing, J. *Bull. Acad. Méd., Paris*, 1952, **136**, 59.
5. See *Brit. Med. J.* Nov. 7, 1953, p. 1043.

Peripheral Neuropathies

FEW nosological problems can be more difficult than that of the peripheral neuropathies. Rational classification is difficult because of the wide clinical variations and the complex pathological and biochemical findings.[6] Accordingly in treatment the tendency has been to apply any remedy for which success has been claimed, regardless of the type of neural disorder.

Clinically the disturbance may be peripheral, in the nerve-roots, in the spinal cord, in the brain, or in the cranial nerves, but this variation only suggests varying susceptibility of the neuronal groups. Pathologically, too, the findings vary enormously. For instance, in the Guillain-Barré syndrome (infective neuronitis, infective polyneuritis, polyradiculoneuritis), SCHEINKER[7] was impressed by the pronounced swelling of nerve-fibres in the spinal roots and cord tracts and in the cranial and peripheral nerves; while LOWENBERG and FOSTER[8] described degeneration of the myelin in the peripheral nerves, spinal cord, ganglia, and brain-stem. FORSTER et al.,[9] on the other hand, found that the central nervous system was not materially affected. Such different pathological findings clearly reflect the differences in the clinical picture; they are no doubt due partly to differences in the temporal evolution of the disorder. Biochemically a few features are now clearly defined. JOINER et al.[10] showed that neuropathy due to

6. See Elkington, J. H. C., Thompson, R. H. S., Matthews, W. B. *Proc. R. Soc. Med.* 1952, **45**, 661.
7. Scheinker, I. M. *J. Neuropath.* 1949, **8**, 184.
8. Lowenberg, K., Foster, D. B. *Arch. Neurol. Psychiat., Chicago*, 1945, **53**, 185.
9. Forster, F. M., Brown, M., Merritt, H. H. *New Engl. J. Med.* 1941, **225**, 51.
10. Joiner, C. L., McArdle, B., Thompson, R. H. S. *Brain*, 1950, **73**, 431.

vitamin-B_1 deficiency is associated with inhibition of the pyruvate-oxidase enzyme system; and THOMPSON [6] has pointed out that abnormally high blood-pyruvate levels may be found not only in patients with neuropathy associated with vitamin-B_1 deficiency but also in those with toxic neuropathies due to lewisite, arsenic, or other metals. These substances are believed to disturb the pyruvate-oxidase system by their attraction for the sulphhydryl groups of the enzyme proteins. In the deficiency neuropathies (possibly including some diabetic forms) it is reasonable to administer vitamin B_1, and in the toxic neuropathies dimercaprol (BAL) which is believed to restore enzyme equilibrium. In the majority of neuropathies, however, there is no clear indication that either vitamin-B_1 deficiency or intoxication is at work—and this seems to apply also to the rare neurological affections associated with porphyria and with carcinoma.

The most common form is the Guilliain-Barré syndrome, and it is chiefly in this group that the various remedies have been assessed. VAN HAGEN and BAKER [11] have described their experiences in 23 cases treated with a combination of vitamin B_1 and dimercaprol. They found that about half of these patients seemed to "show improvement," and concluded that this improvement indicated that the syndrome was itself due to disturbance of the enzyme system. Other workers have suggested an allergic basis, emphasising the histological picture of œdema of the neural tissues leading to secondary myelin degeneration. These days such a hypothesis leads inevitably to a trial of cortisone or corticotrophin (A.C.T.H.). Among others, BLOOD et al.[12] and NEWEY and LUBIN [13] have reported dramatic improvement in the Guillain-Barré syndrome after administration of 25 mg. of corticotrophin intravenously over a period of 8 hours each day for 5–10 days. Discontinuation of treatment was followed by relapse, but this was successfully countered by a further course. In this issue Dr. LIVERSEDGE and Dr. LEATHER report a good response in a patient with polyneuritis associated with periarteritis nodosa. This association is well recognised, and it seems possible that both disorders may be due to tissue hypersensitivity which may be primarily neuronal or due to affection of the vasa nervorum. Apparently allergy may play an important part in the Guillain-Barré syndrome; the sensitising agent is still unknown, but this syndrome almost invariably follows some minor infection. Furthermore the polyneuritis associated with measles, mumps, diphtheria, and even porphyria might also be explained by this hypothesis. Though the evidence is still imperfect, the day may be approaching when neuropathies can be treated more rationally.

11. Van Hagen, K. O., Baker, R. N. *J. Amer. med. Ass.* 1953, **151**, 1465.

12. Blood, A., Locke, W., Carabasi, R. *Ibid*, 1953, **152**, 139.
13. Newey, J. A., Lubin, R. I. *Ibid*, p. 137.

Annotations

CLINICAL RESEARCH BOARD

THE Medical Research Council announces this week the membership of the Clinical Research Board, set up in accordance with the white-paper on Clinical Research in Relation to the National Health Service.[1] The board, appointed for three years after consultation with the Ministry of Health and the Department of Health for Scotland, has the following members:

Sir GEOFFREY JEFFERSON, F.R.S., emeritus professor of neurosurgery, University of Manchester (chairman); Prof. DUGALD BAIRD, midwifery department, University of Aberdeen; Sir HENRY COHEN, department of medicine, University of Liverpool; Prof. E. C. DODDS, F.R.S., Courtauld Institute of Biochemistry, Middlesex Hospital, London; Sir JAMES LEARMONTH, department of surgery, University of Edinburgh; Prof. A. J. LEWIS, Institute of Psychiatry, Maudsley Hospital, London; Prof. G. W. PICKERING, medical unit, St. Mary's Hospital, London; Prof. R. PLATT, department of medicine, University of Manchester; Sir JAMES PATERSON ROSS, surgical unit, St. Bartholomew's Hospital, London; Sir JAMES SPENCE, department of child health, King's College, Newcastle upon Tyne; and Prof. B. W. WINDEYER, Meyerstein Institute of Radiotherapy, Middlesex Hospital, London. The chief medical officers of the Ministry of Health, the Department of Health for Scotland, and the Ministry of Health and Local Government in Northern Ireland will be assessors to the board, and the secretary of the Medical Research Council will attend all meetings. Dr. F. J. C. Herrald, a senior medical officer on the council's headquarters staff, will act as secretary.

The board will be concerned with promoting whatever clinical research needs to be organised on a national basis. It will aim to ensure that all fields of inquiry are adequately covered, and will collect, collate, and distribute information in order to reduce the time-lag between discoveries and their application.

1. See *Lancet*, July 18, 1953, pp. 123, 133.

TEETHING-POWDERS

AT an inquest last week the death of a child aged ten months was attributed to bronchopneumonia due to pink disease, itself the result of mercury poisoning following "innocent overdosage" of teething-powder.[1] Last year the Minister of Health, replying to a question in the House of Commons, said that "the indiscriminate use of teething-powders containing mercury is clearly undesirable." [2] This advice has been unheeded and teething-powders containing calomel are still being sold to the public without adequate warning about their dangers.

In his article [3] last week Dr. Farquhar described two more cases where mercury caused or contributed to death: one child died from severe renal damage, apparently a similar condition to that reported by Wilson et al.[4]; and the second showed many of the clinical features of pink disease. The nephrotoxic action of mercury is undisputed and these reports alone are sufficient to proscribe the use of mercurials in infancy. But the rôle of mercury in pink disease is not yet clearly defined: that the disease is a form of poisoning by or hypersensitivity to mercury has been strongly suggested by the work of Fanconi [5] in Switzerland and Warkany [6] in the U.S.A. They have shown that in many cases of pink disease there is either a history of mercury ingestion or inunction or an excretion of excessive amounts of mercury in the urine. This is true also of reports from this country,[7 8] Australia,[9] and South Africa.[10] These have demonstrated the interesting correlation between

1. *Times*, Dec. 3, 1953.
2. See *Lancet*, 1952, i, 827.
3. Farquhar, H. G. *Ibid*, Dec. 5, 1953, p. 1186.
4. Wilson, V. K., Thomson, M. L., Holzel, A. *Brit. med. J.* 1952 i, 358.
5. Fanconi, G., Botsztejn, A. *Helv. pædiat. acta*, 1948, **3**, 264.
6. Warkany, J., Hubbard, D. M. *J. Pediat.* 1953, **42**, 365.
7. Holzel, A., James, T. *Lancet*, 1952, i, 441.
8. James, G. A. *Gt Ormond St J.* 1951, i, 48.
9. Clements, F. W. *Med. J. Aust.* 1953, ii, 213.
10. Epstein, B. *S. Afr. med. J.* 1953 **27** 823.

the age-distribution of the disease in various parts of the world and the differing mercury habits of the population. Fanconi has produced positive skin reactions to mercurials in affected children, while Warkany has drawn attention to the symptoms shared by pink disease and mercury poisoning. The beneficial effect of dimercaprol (BAL) in some cases of pink disease also points to mercury as a possible cause.

On the other hand, many pædiatricians are unconvinced that mercury is a common cause of pink disease in this country, for various reasons. Often there is no history of mercury having been taken, and, when there is it is likely that it has been given as "home treatment" in the early stages of already established pink disease. Oliguria with a concentrated urine is typical of pink disease, so the finding of an excess of mercury in single specimens is not conclusive proof of an abnormal daily output. Fewer infants are now ritually purged with calomel, but pink disease is rather more common. Holzel and James [7] found more cases in an area where only 7% of infants regularly received teething-powders than in a neighbouring county where 37% had regular doses. As Péhu [11] demonstrated, pink disease tends to occur in epidemics, but it is doubtful whether the administration of mercury shows similar fluctuations. The natural history of pink disease is unlike adult mercurialism, nor does it accord with recognised hypersensitivity reactions. Finally, James [8] found that treatment of the mouth lesions with mercurochrome did not adversely affect the course of the disease. In spite of these potent criticisms, it is likely that mercury plays some part in some cases of pink disease—and there is certainly as yet no other very satisfying explanation of the condition. Recent alternative hypotheses, such as the endocrine approach of Cheek [12] and the psychosomatic basis of Leys and Cameron,[13] are not entirely convincing, so the student of pink disease may say, with Lady Blanche, "there's an unbounded field of speculation, on which I might discourse for hours."

Whatever the final conclusions may be, there is an immediate practical issue. Seven million teething-powders of the most popular brand are sold annually, some of them on medical advice. Each contains half a grain of calomel, which has no therapeutic properties superior to those of relatively harmless drugs. It is surely time that calomel was withdrawn from the formulæ of teething-powders.

NOCTURNAL MYOCLONUS

MANY people have occasionally experienced the sudden start which may momentarily wake them just as they are dropping off to sleep. Jack London had a pleasing phylogenetic explanation for it in one of his novels. He suggested it was the vestigial remnant of the protective start which roused man's arboreal ancestors as they were about to fall from their sleeping perch to the dangers below. In some people these nocturnal jerks may be frequent and repeated, and for these cases Symonds [14] proposes the term nocturnal myoclonus and suggests that this is an epileptic variant. Of 5 cases which he describes in detail, there is suggestive evidence in 2 of other epileptic manifestations: while in 2 others the setting of attacks or their precipitation is reminiscent of the type of reflex myoclonic epilepsy well known to neurologists.

The mechanism of the generalised reflex myoclonic jerk is of considerable physiological interest. It must represent the sudden momentary discharge of some centre having access to widespread motor pathways, and is peculiar amongst epileptic phenomena in showing no change in consciousness and ending abruptly almost as soon as it begins. This latter feature may suggest an active inhibitory element, such as is seen so prominently in the cataplectic attack, itself sometimes precipitated by sudden surprise. Neurophysiologists are now familiar with subcortical centres, such as the mid-brain reticular formation, which mediate widespread motor inhibition or discharge. It may be that nocturnal myoclonus represents an abnormal discharge from such lower levels where functional representation is less differentiated and where inhibition and excitation are more closely juxtaposed. But the evidence for regarding *all* such cases as basically epileptic does not at present seem very great. It is perhaps still a matter of clinical impression, which, when properly interpreted, can supply the hypothesis which adds value to further observations.

11. Péhu, M., Ardisson, P. *Bull. Soc. Pédiat. Paris*, 1926, **24**, 352.
12. Cheek, D. B. *J. Pediat.* 1953, **42**, 239.
13. Leys, D., Cameron, K. *Brit. med. J.* 1952, i, 191.
14. Symonds, C. P. *J. Neurol. Psychiat.* 1953, **16**, 166.

RENAL TRANSPLANTATION

THE transfer of tissue to a new site in the same animal or patient is described as autotransplantation; the transfer of tissue from one subject to another of the same species as homotransplantation. Autotransplantation of skin and bone is an established part of surgical practice; and homotransplants of bone, artery, and cornea have been successful in many patients. There is doubt, however, as to how far homotransplants of bone and artery are actually viable; they may merely form an appropriate scaffolding for new tissue growth. Corneal grafts are in rather a special category, since they contain very few cells and are relatively or completely avascular; and this reduces the likelihood of the immunity responses which destroy the generality of homografts.[1] Rather different problems will have to be solved before homotransplantation of complex organs, such as the kidney, becomes practicable; but increasing skill in vascular anastomosis, and increasing knowledge of the structure of immunity in different individuals of the same species, allow us to hope that these will be solved. Meanwhile, bold attempts are occasionally made to anticipate the future.

In December of last year, a boy of 16 fell from a scaffolding and ruptured his right kidney; after this had been removed at an emergency operation it was found that his left kidney was hypoplastic, and not forming urine. When he had been anuric for a week, his mother insisted that one of her kidneys should be grafted into the patient; and this was done, the kidney being ischæmic for only 55 minutes. Urine formation began at once, and in a few days red cells and protein disappeared from the urine. The blood-urea fell from over 400 mg. to less than 100 mg. per 100 ml., and the urea clearance of the grafted kidney ranged between 8·4 and 14·2 ml. per min. The urine volume was over 3 litres when the blood-urea was high, and at this time there was considerable electrolyte loss in the urine; later, the urine volume fell with the blood-urea, although the urea clearance remained constant—findings of great interest in relation to Platt's hypothesis that the polyuria of renal failure is largely an osmotic diuresis.[2] After 16 days the patient was allowed up, and some protein appeared once again in the urine; on the 21st day after grafting the flow of urine stopped abruptly, and the kidney swelled to twice its size; and the patient died after a further period of anuria. At necropsy the kidney showed cellular damage in both glomeruli and tubules; there was also vascular damage, with hyaline necrosis; but the blood-pressure had been raised for some time before death, and the vascular changes may have been related to this, and not to the renal "apoplexy" which happened so suddenly on the 21st day after grafting.

1. Maumenee, A. E. *Transplantation Bull.* 1953, **1**, 7.
2. Platt, R. *Lancet*, 1951, i, 1239.

There was a progressive rise in the gamma-globulin fraction of the patient's plasma-proteins; this supports the suggestion that the renal catastrophe was due to formation of antibodies to the foreign kidney, but there was no deviation of complement.

Reporting this case, Michon et al.[3] point out that the kidney perished despite the satisfactory vascular anastomosis, the absence of infection, and the close relationship of donor and recipient. They attribute the destruction of the kidney to an immune reaction, pointing out that the time taken for this to develop is comparable to that found in homotransplantation experiments from the pioneer work of Carrel [4] onwards. Their observations do show, however, that a grafted kidney can function usefully, though not normally—a limitation which applies even to autotransplanted kidneys in dogs.[5]

Attempts have also been made to transplant kidneys into patients with chronic nephritis.[6] Almost all have failed sooner or later, commonly because of infection, favoured perhaps by the use of cortisone or corticotrophin, given with the object of suppressing immunity mechanisms. Some hope, however, is to be had from Miller's [7] report of the survival of one transplanted kidney for $5^1/_2$ months, after which the patient died because of his persistent hypertension and not because of renal failure, the blood-urea having fallen to 33 mg. per 100 ml. At present it seems that a renal homotransplant is almost but not absolutely certain to be destroyed. Therein lies the stimulus to further effort; and perhaps for the moment this should be experimental rather than clinical, lest vain hopes be raised.

CORTICOTROPHIN AND CORTISONE IN DERMATOLOGY

THE Ministry of Health recently announced [8] that supplies of corticotrophin (A.C.T.H.) and cortisone are to be made available for the treatment of a limited number of diseases, including certain dermatoses. Up to now, supplies of these hormones for dermatological use have largely been distributed by the Medical Research Council. The report of the panel of dermatologists to whom their use was entrusted has not yet been published.

In a summary of four and a half years' experience, O'Leary and Erickson [9] describe two main categories of skin disease in which they consider the use of corticotrophin and cortisones indicated. One group comprises otherwise fatal disorders, notably pemphigus vulgaris and systemic lupus erythematosus: here treatment may have to be sustained for years, although there may be periods of remission when it may be temporarily suspended. On the other hand, in self-limited but violent skin reactions, such as severe contact sensitisation dermatitis or acute drug eruptions, a few days' treatment with the hormones may suffice. O'Leary and Erickson stress that the great majority of patients with skin disorders do not benefit from this treatment. The usual general contra-indications for their use apply equally to skin diseases, and, in addition, acrosclerosis is a special risk; 6 patients with this disorder died of "cerebrovascular accident associated with severe hypertension and renal disease" after treatment with cortisone. The success of treatment may be limited by irreversible damage: for example, in lupus erythematosus the impairment of cardiovascular and renal function imposes particular difficulties in the use of these hormones; and convulsive seizures may be increased in frequency [10] and necessitate interruption of treatment.

When long-continued use of corticotrophin or cortisone is necessary, it is often difficult to devise a dosage which will control the disease without producing serious side-effects. This danger cannot be overcome by the local application of cortisone, which is of no value when used in this way. There is some hope that Compound F may be effective by local inunction [11]; it does not seem to cause systemic effects, judging by the number of circulating eosinophils, when given locally.[12]

Corticotrophin and cortisone are not curative in any skin disease in the sense that they abolish the underlying pathological process. They appear to modify the body's reaction to the process, but unless the cause is removed the disease continues, as it were "underground." Thus, in systemic lupus erythematosus, the laboratory can detect signs of activity although the patient is relieved of symptoms. In epidermal sensitisation, eczema may be suppressed, but patch-testing shows that the hypersensitivity persists. Moreover, not all cases respond and they may in fact grow worse during, or after stopping, treatment. It is therefore obvious that, useful as these substances may be in the suppression of symptoms, they are by no means the answer to the dermatologist's prayer.

THE MOTHER AND THE NURSERY SCHOOL

THE idea that civilisation begins in the nursery is not new; but the corollary—that the mother, as prime civiliser, needs every tool in the way of intelligence, education, and skilled help that Nature and the Treasury can afford her—is as yet only dimly apprehended. She can, however, get skilled help of a particular kind from the nursery school. The W.H.O.-UNESCO advisers on mental hygiene in the nursery school, who met in Paris in 1951 and whose report [13] has now appeared, are careful to draw a distinction between the nursery school proper, which provides, for a few hours daily, "an extension and enrichment" of those opportunities for development which the child in his early years gets in his own home, and the day nursery, which has to provide substitute maternal care throughout the day for infants and young children whose mothers are out at work, or for other reasons unable to look after them. It is true that many day nurseries provide some preschool education on nursery-school lines, but this is usually a secondary function. The child attending a true nursery school spends most of his time with his mother; the child in the day nursery may spend as much as 12 hours of the 24 away from her. The day nursery, then, ought to be planned to give him as good a substitute for maternal care as possible, and also to offer him the chances provided by the nursery school. The same staff, the group say, cannot be responsible for both: those who give care throughout the day should be relieved, during a part of the day, by those who give him preschool education.

The years between infancy and school life are packed with emotional experience. During them the child is normally building up a concept of his "self," separate from reality (as he conceives reality) but having a relationship with it. He also develops a personal relationship with another person—his mother—and through this experience learns to form a personal relationship with someone other than his mother. This person is often the nursery-school teacher; and through her he will develop the capacity to form relationships with several people, including those of his own age. She must therefore be a person of special qualities, and carefully prepared for her

3. Michon, L., Hamburger, J., Oeconomos, N., Delinotte, P., Richet, G., Vaysse, J., Antoine, B. *Pr. méd.* 1953, **61**, 1419.
4. Carrel, A. *J. exp. Med.* 1908, **10**, 97.
5. Dempster, W. J., Jockes, A. M. *Acta med. scand.* 1953, **147**, 99.
6. Hume, D. M., Merrill, J. P., Miller, B. F. *J. clin. Invest.* 1952, **31**, 640.
7. Miller, B. F. *Transplantation Bull.* 1953, **1**, 17.
8. See *Lancet*, Aug. 29, 1953, p. 459.
9. O'Leary, P. A., Erickson, J. G. *J. Amer. med. Ass.* 1953, **152**, 1695.
10. Mitchell-Heggs, G. B. *In* Cortisone and A.C.T.H. Edited by W. S. C. Copeman. London, 1953.
11. Sulzberger, M. B., Witten, V. H., Smith, C. C. *J. Amer. med. Ass.* 1953, **151**, 468.
12. Smith, C. C. *Arch. Derm. Syph., N.Y.* 1953, **68**, 50.
13. Mental Hygiene in the Nursery School. UNESCO. H.M. Stationery Office, 1953. Pp. 33. 1*s.*

job: someone at ease with herself, with warmth, kindness, and objectivity—not someone who has taken up the work to satisfy her own emotional needs.

Methods of training for this work differ in different countries; here it is usual for girls leaving school to enter as nursery-school student nurses; some go on to become heads of nursery schools while others use this experience as a preparation for a nursing training. In some other countries, however, the candidate trains as a teacher, and only decides towards the end of her course in what kind of school she wants to teach. She thus has the advice of her teachers in making her choice; and if the choice turns out to be a wrong one she can change to some other branch of teaching, since her qualification is valid in any kind of primary school.

A successful nursery-school career, the group say, depends primarily on "the teacher's own understanding of children, developed through a continuous experience with them during her own period of growth." Unfortunately this experience is not as common as it used to be, and "many growing girls are unprepared for the emotional responsibilities of motherhood." The reformers of the last century who prised open the gates of education for girls were obliged to direct them along the road trodden by boys: that way only lay equality of academic opportunity. An unforeseen result of this has been that the ancient and respectable career of childbearing and child rearing has acquired an amateurish aspect: no diplomas are given, and the training—now that families are small—is deplorable. "Only too often," the group say, "the young mother's first baby is also her first intimate contact with a preschool child"; and they do not suppose that domestic science and motherhood classes for school-leavers can fill the bill. "Rather our educational system should make it possible for older girls naturally to take small responsibilities for younger children, and particularly for children of preschool age." The prime civiliser, in fact, should be given early and adequate experience of the sort of people she will have to civilise.

RADIOGRAPHY OF THE MAXILLARY ANTRUM

IN 1891—the year after Röntgen discovered X rays—Scheier [1] reported on the value of radiography in the diagnosis of diseases of the nose and throat; but the quality of his films was poor and the outlines of the sinuses could hardly be seen. Nowadays, however, technique is so nearly perfect that radiography is without doubt the most useful adjunct to the clinical diagnosis of antral disease.

Burtoff [2] found that the radiological reports of maxillary sinusitis were confirmed by proof-puncture or other operation in 86 out of 100 cases. Ballantyne [3] correlated proof-puncture findings with X-ray appearances in a series of 75 cases of suspected antral infection. Of 66 cases in which there were radiographic changes 57 showed evidence of infection on lavage. Perhaps even more encouraging is the fact that in the 9 cases where there was no radiographic abnormality, the washings showed no evidence of infection. This is important; for the same cannot be said of other methods such as transillumination, which may indicate that an antrum containing pus is completely clear. In a further series of 206 cases Ballantyne and Rowe [4] confirmed the earlier findings. Three main groups were distinguished: the first group consisted of 10 cases in which the antra were completely clear on radiography; the second contained 88 cases in which the antra were completely opaque; and the third consisted of 82 cases with radiographic appearances of a thickened membrane. On puncture, there was no naked-eye evidence of infection in any of the cases that were radiographically clear; more than 8 out of every 10 that were opaque in the film gave positive findings on lavage; while in less than 1 in 10 of those with a "thickened membrane" pus or mucopus was found in the wash-out. It would thus seem that a negative radiograph of the antrum is pretty reliable.

What causes radiographic changes in the antrum—is it a mucosal or bony change, or is it the presence of fluid? Why should an antrum be opaque in the absence of gross infection? Why are sinus radiographs less reliable in children than in adults? Is it possible to distinguish thickening of the membrane due to allergy from that caused by infection? Samuel [5] goes a long way towards answering all these questions. An antrum may be opaque for many different reasons. Inaccurate positioning of the patient may produce the appearance of an opacity in the antra; and certain anatomical factors may cause confusion, notably thickening of the bony walls in relation to the size of the cavity, thickness or honeycombing of the bones of the cranial vault, alterations in the slope of the normal antral walls, and overlying swelling of the soft tissues.

The two factors most commonly responsible for mucosal thickening are allergy and infection. A scalloped mucosal swelling, with the convexities directed towards the cavity, is likely to be allergic; mucosal thickening parallel to the walls is likely to be infective. Thickening is usually greater in allergy and is often accompanied by enlarged turbinates; and polypi in the nose or antrum are nearly always allergic. When the antrum is completely opaque, it is impossible to distinguish these two causes; but some help may be had from examining the other antrum, for seldom are both completely opaque. If fluid fills the cavity it will be uniformly opaque, but when air is also present a fluid level is seen. Encysted fluid not under tension may form an apparent fluid level; but the absence of mucosal thickening should make one suspicious, and the lateral view will demonstrate the convexity of the "level." Thinning of an antral wall may be caused by pressure atrophy from cysts or tumours, but is also seen in the normal antrum with a well-developed alveolar recess: pressure atrophy decalcifies the walls, normal thinning does not. Malignant infiltration usually first involves the medial wall, but here it is not easily detected; infiltration of the lateral wall is relatively easy to detect but usually implies that the growth is advanced.

A single radiograph can only show the state of the antrum at the time of exposure; the changes are often transient, and thus serial radiography may be essential.[6] Radiography of the maxillary antrum only supplements clinical examination, and should not be undertaken indiscriminately; but an opaque antrum usually means gross disease, and a clear one can nearly always be relied on as excluding it.

THE WAVERLEY COMMITTEE

IN September the Ministry of Defence announced [7] that the Government proposed to set up a small committee under the chairmanship of Viscount Waverley, F.R.S., "to review the arrangements for providing medical and dental services for the Armed Forces at home and abroad in peace and war." It has now been announced that the other members of the committee are: Sir Harold Boldero, F.R.C.P., Mr. S. R. Dennison, Sir Thomas Gardiner, Sir Arthur Porritt, F.R.C.S., and General Sir James Steele. Mr. E. P. Donaldson, of the Ministry of Defence, is to act as secretary. The committee met for the first time on Dec. 2.

1. Scheier, M. *Arch. Laryng. Rhin., Berl.* 1897, **6**, 57.
2. Burtoff, S. *Arch. Otolaryng., Chicago*, 1945, **5**, 516.
3. Ballantyne, J. C. *J. Laryng.* 1946, **61**, 306.
4. Ballantyne, J. C., Rowe, A. R. *Ibid*, 1949, **63**, 337.
5. Samuel, E. *Brit. J. Radiol.* 1953, **26** 465.
6. Capps, F. C. W. *J. Laryng.* 1945, **60**, 373.
7. See *Lancet*, Sept. 19, 1953, p. 615.

Special Articles

THE MALADJUSTED SCHOOL

W. MARY BURBURY
M.A. Camb., M.B. Lond., D.P.M.
SENIOR LECTURER IN CHILD PSYCHIATRY AT THE UNIVERSITY OF LEEDS

THE present situation of schools for maladjusted children seems so deplorable, and so likely to discredit their value, that it requires discussion.

THE PIONEER SCHOOLS

Although a few voluntary schools existed before 1939, and did good work, it was during and after the war, and partly because difficulties arising during evacuation drew public attention to "problem" children, that the idea of such schools became, as it were, fashionable. It was taken up by the Ministry of Education and the local education authorities and was further stimulated by the 1944 Act and the Curtis report. Partly because of the exigencies of the time, but also, I think, because of lack of informed opinion, schools have been, and are being, established without consideration of the basic psychological situations involved, or of the needs they are expected to fulfil, without specially selected and trained staff, and (most important of all) without provision for treatment.

The first schools were started and developed by enthusiasts who, whatever the errors they made and whatever the emotional background of that enthusiasm, at least brought to their work ideals, warmth, and a desire to understand. But, as seems to happen sometimes, statutory provision, by obliging the local authorities to set up such schools or hostels, and by limiting their right to use (and stressing their responsibility if they use) independent schools—thereby suggesting that these are less good—has made it seem that the only important facts are buildings, staff, school equipment, and living facilties. That this group of children have special needs, and that, since they are sick children their first need is for treatment, seems to be overlooked.

The general public have criticised the voluntary schools for maladjusted children on the grounds that they interfere with their own convenience and rights as citizens. Their objections to them derive partly from some of the more glaring errors of the pioneer school, and partly from the disturbance caused in a neighbourhood by antisocial behaviour, the difficulties resulting from mixing of the sexes, especially among adolescents, and a well-founded belief that too much freedom is not a psychological antidote for earlier over-repression, and that the amount of liberty that can be given to any child without engendering anxiety, and hence licence, is limited. School inspectors, too, have criticised these voluntary schools on grounds of educational inadequacies, sometimes being evidently unaware of the psychological principles which must be applied in dealing with these children. Matters have been little, if at all, improved by the recent provision that such a school should only be used if the local authority is satisfied that it is suited to the child, and that the child is benefiting from the education received there. One authority felt that this provision was satisfactorily fulfilled by asking me to see a child whom I had never previously seen, attending a school of which I had no knowledge whatever. When I asked permission to visit the school, the authority's representative expressed the view that the school was "no concern of mine."

STATUTORY SCHOOLS

Alongside these voluntary schools the local authorities' own schools have developed. These, so far as my experience and knowledge go, show little sign of profiting by the earlier experiments. Of all the authorities with whom I have discussed this problem, only one clearly expressed the opinion that a school should neither be opened nor kept open in the absence of good psychiatric help. What seems to be insufficiently faced is that these children are sick; by definition, the schools are established for the care and treatment of the emotionally maladjusted—a term which, if it means anything, means the psychologically sick. No-one sending a sick child to hospital for long-term treatment—because he has, say, tuberculosis, or needs lengthy orthopædic treatment—would question that his medical treatment must take precedence of his educational progress (though we have come to understand that schooling for such children is valuable both in itself and as part of the treatment). Nor does anyone doubt that informed medical decisions on the education of the backward must be accepted, though of course the opinion of experienced teachers handling such children may influence such decisions. Indeed, it is recognised that teachers for such children need to be specially selected, and given special training for this difficult work. Yet none of these things seems to have been accepted in the case of psychologically disturbed children, even though they are regarded as sufficiently disturbed to be unsuitable for outpatient treatment in child-guidance clinics, and to take their places in ordinary schools.

Nor has there been any real attempt to select staff. Psychologically disturbed people, because of their own disturbance, often have a sympathy with such children, and are attracted to this work; but, also because of their disturbance, they cannot furnish the stable background so essential to the child's further development. The other group of teachers, or would-be teachers, who appear in such schools, tend to be those who, for lack of training or capacity are unable to get or keep places even among "ordinary" children. Of course there are brilliant exceptions. Nevertheless one headmaster recently said to me: "I spend as much time trying to sort out the problems of my staff as I do those of my children."

SELECTION FOR PLACES

Selection of children for the schools seems to be based mainly on expedience. Thus the Ministry insists repeatedly on the separation of boys from girls—which, whatever the advantages of coeducation, seems to be wise in view of the acute sexual problems which are commonly a part of emotional instability and maladjustment. Heads of schools accept the importance of some selection on the basis of age-groups and intelligence; and many now recognise the value of a full child-guidance report—from the psychiatrist, the psychologist, and the psychiatric social worker (who also reports on the home). Nevertheless, it is still possible to find in one and the same school the following types of children: the relatively normal child, admittedly sent because of difficult home surroundings and only because of these; the antisocial child, destructive and pilfering, of the "affectionless" type, sent in, apparently, because of his nuisance value; the dependent, infantile child, of neurotic make-up; and, mixed with these, more than one who suggests early psychosis, among whom may be one of really dangerous, violent tendencies. Obviously it is difficult, if not impossible, to run any school satisfactorily with such divergent and conflicting types. Because of the shortage of places, children are sent where there are vacancies; and, partly because of our lack of knowledge, the suitability of the school for the child or the child for the school plays very little part in the placement.

SOME PROPOSALS

Destructive criticism is notoriously easy, and it seems proper, therefore, to offer some tentative constructive

ideas—though those of us who have worked with disturbed children know how often experiments need modification in the light of further experience.

First, at the back of each group of such schools there should be a hospital unit, adequately staffed by psychiatrically trained personnel. Interchange between the hospital ward and the school should be easy, and the hospital ward might well act as a diagnostic centre as well as a place for treatment. Such a centre could send out its young patients into the schools when they were fit, and could take back into the wards any who proved unable to stand the stresses of school life. Teachers might be allowed to come into hospital to instruct individual children or very small groups. At the other end of the scale, the school should have a hostel for children ready to try ordinary school life, and for adolescents ready to try a job, but both as yet unready to return to their own homes. A holiday centre or camp is also needed for children unable to return home for holidays, either temporarily or permanently. The natural centre for such an experiment would be a university, with a medical school, offering postgraduate courses to doctors specialising in child psychiatry, and also providing courses for teachers and social workers, particularly psychiatric social workers, entering this field of work. A single hospital unit, of course, could provide the medical background for more than one school; and separate schools would be planned to serve children of different ages, different sexes, different intelligence levels, and different types of problem.

The researches of Bowlby, and the experience of all child psychiatrists, suggests that the commonest basic factor in emotionally disturbed children is insecurity in the early home environment, however such insecurity may be caused. On this basis, various forms of illness develop as a result both of the personality of the child, and of his individual experiences. Such children therefore have a common basic need for a stable background. A combined scheme, of the type outlined above, would mean that throughout treatment there would be a system of continuous and cohesive relationships, and the child would experience no sudden shocks or breaks likely to cause setbacks. He would himself thus have the chance to develop a capacity for stable relationships. The handling of a child by one therapist throughout his treatment, and his education in one school, with continuity of discipline, must have immense advantages. A capacity for relationships can never be developed by a child who is repeatedly transferred from one unit to another, however excellent such units may be in themselves.

Apart from their need for a stable background, maladjusted children vary considerably, and different cases require different handling, both psychiatrically and educationally. Thus the aggressive, violent, antisocial child, and the timid, phobic one, are unlikely to help each other if mixed in the same group. Moreover, teachers and therapists alike find that they do their best work with one group rather than another. Thus, in the interests of staff and treatment, as well as of the children, careful placement is an important part of good treatment.

Children are referred for residential treatment when it is felt that outpatient treatment would be inadequate to their needs This implies that they have personality problems, for the normal child whose environment only is the difficulty is presumably placed in a boarding-school for normal children. By the time a child with personality disturbances is of school age, his disturbances are so fixed that he needs direct treatment for them. Good environment may help, but good environment alone will no more cure his condition than it will, alone, cure a tuberculous spine. Both need their special types of individual and long-term treatment. We spend money unquestioningly on the 24-hour daily treatment of spinal tuberculosis. Psychological treatment is sometimes equally lengthy; and it ought to be in the hands of the psychotherapist. True, immediate symptoms may sometimes disappear without such long-term care, but if we are to reduce the wastage caused by psychological illness in adult life, we must deal with something more fundamental than immediate symptoms.

In many of these cases there are problems in the home; and since the child returns there sometimes during the holidays, and in any event at the end of his period of treatment, some help should be given at that end. Whether this should be done by a psychiatric social worker (P.S.W.) from the clinic which referred him, or by the unit described above, may be a geographical problem. The P.S.W. of a centre which draws patients from a wide area of the country may not be able to visit often enough to give real psychological help to the parents. Moreover, the P.S.W. of the referring clinic may already have made a good relationship with them which it would be unfortunate to break; and such a relationship is a valuable link when the child comes home for short periods or permanently. Unfortunately this kind of work is sometimes overlooked, mainly because of the demands on the service and the lack of workers, but sometimes because the value of the P.S.W. as a link between the home and the school has been insufficiently understood.

Someone once said: "It takes a neurotic to heal a neurotic"; to which another made the reply, "True: but it must be a healed neurotic." Probably only a person who has himself suffered from this sort of difficulty has the patience and sympathy to want to help others in the same straits; but unless he has understood and coped with his own difficulties, they will stand in the way of his full capacity to help. Not all teachers want to help, or are capable of helping, these children; and no-one should be expected to try unless he does so wish, since the work is exacting and difficult, and demands a personal generosity which exhausts even the most vital. Staffing should therefore be generous, hours short, and classes small; but over and above this, teachers should have special training in the handling of the maladjusted child. Postgraduate training for experienced teachers who wish to specialise is now usual, and might well be extended to teachers interested in this type of work. Specially trained nurses, too, are needed in the hospital ward: they need experience in child psychiatry as much as the psychiatrist himself.

The scheme outlined here would not only increase the value of the service, but would reduce costs by combining in one unit a number of projects, and ensuring that staff and premises were used more economically. Such an experiment might well make the title of this article a misnomer.

A SCHOOL FOR MALADJUSTED BOYS

SOMETIMES the dynamic forces which develop between parents and children rock the home. The child becomes unmanageable, explodes into temper tantrums, runs away from home, truants from school, falls into delinquency, develops enuresis, or shows behaviour verging on the psychotic. The parents make their own responses: the mother may be worn out, anxious, shrewish, or hysterical, the father irascible, brutal, or increasingly bored by the turmoil—which he escapes by going out to a public-house. In such a situation a diversion may have much therapeutic value.

One way of creating a diversion is to place the child in a residential school for a time, with the aim of restoring him to his family when things have simmered down, and all parties have learnt a little more about the art of social living. For in the event it is not merely the child but the whole family which is found to be maladjusted.

SURROUNDINGS

Bredinghurst, at Peckham Rye, a school for maladjusted boys opened by the London County Council in 1948, is conducted on lines dictated by this belief. Mr. W. F. Kemp, the headmaster, has been obliged to develop his methods as he went along, for he had no model to copy. The school put at his disposal consisted of a roomy house with good outbuildings, and four smaller houses, all solidly built, standing in some 2 acres of ground, at that time derelict. The grounds are now pleasantly laid out with two large playing-fields, a sizable pond with water-lilies and goldfish, and plenty of brilliantly coloured flowers, raised from seed in a home-made greenhouse.

The school from the time it opened has taken its full complement of 45 boys between the ages of six and fifteen. The main building holds the classrooms, a big playroom for winter and wet days, and the clothing-room, where boys are allowed to exercise personal taste in the choice of pyjama-stripes and shirts. It also contains the private quarters of Mr. Kemp and his wife (who supervises the clothing, feeding, and general care of the boys). There are also two cottages on the estate which provide a big room for art and pottery work, as well as another large room which is used for various purposes—cinema shows, boxing, and group therapy. Several small rooms in these cottages are used by the staff for intelligence testing, interviewing parents, office work, and so on.

The boys all live in the three residential houses, being distributed according to their age-groups—little boys, older boys, and boys of intermediate age. The houses are simply furnished, but with an eye for colour. Each of the bedrooms (most of which contain two beds) is decorated in a different colour, with beds and chairs painted to match, and curtains and mats chosen to go well with the main colour scheme. A bed and a chair and a share in a chest of drawers can be provided for almost any child in his own home; so the parents have no reason to think that their child is enjoying luxuries they cannot afford. The boys eat in their own houses, and the dining-rooms too are decorated in pleasant colours. The smaller boys, who need some help, sit at tables for 6, with one of the staff to encourage them in the management of cutlery; the older boys have tables for 4, at which they can form their own groups. Each house has a playroom with some suitable equipment in the way of toys, games, and books.

The house matrons are experienced in looking after children, and some hold either a university diploma in social science or else the Home Office certificate in child care. They treat the children in a kind and motherly manner without trying to present them with substitutes for their own mothers. Indeed the school does not attempt, in this or any other way, to supplant the parents; for the whole object is to get the child to form a better relationship with his own mother and father. He forms with the school-teachers and house matrons much the same relationship as a child in any other boarding-school does with friendly and reliable members of the staff.

THE PARENTS

It was early clear that the education of the child in a residential school would not suffice, by itself, to overcome his maladjustment: the parents, too, needed teaching; and they had to be encouraged to take their share in promoting his recovery. In 1950 a psychiatric social worker was appointed. As soon as it has been agreed that a child is to be offered a place in the school, she visits his home, for the purpose, as she explains, of telling the parents what the school is like. This visit, of course, besides putting her on a friendly footing with the family, enables her to study the home conditions and the personalties of the parents themselves. Later, by her regular contact with the parents she tries to help them with some of their own problems in relation to the child. The parents learn that if the school is to do its job their collaboration is essential. Whenever possible they are told this together—it is not left to the mother to pass the message on to a husband who at the outset may be unreceptive, or even antagonistic, to the school's intentions. In the long run few parents have failed to coöperate: for they usually mean well by their children, however incompetently they carry out their intentions. Parents are asked to accept certain obligations: they are expected, for instance, to write regularly to their children, to visit regularly, and if possible together; and they are told that when the time comes for the child to go home for weekends one of them will be expected to come and fetch him on the Friday night and bring him back on the Sunday, and that it is important not to break these engagements for trivial reasons or without giving warning. Of the parents of the 150 children who have already passed, or are passing, through the school very few have failed to do their share in these ways; and only about 5 have flatly refused to attempt it.

PSYCHOTHERAPY

In the school the child is not only taught in the ordinary sense, but is given whatever psychological help he needs. As soon as he is able to profit by it, individual psychotherapy gives place to group therapy, which is proving very useful. One of the psychiatrists attached to the L.C.C. holds regular sessions twice weekly in the school, a lay psychotherapist attends five days a week, and an educational psychologist is also attached to the staff. Thus there is a full child-guidance team working on the premises and in close collaboration with the school staff—an arrangement at present unique in this country. The child's maladjustment can, in fact, be studied at one and the same time from the psychiatric, the educational, and the social aspects. Case-conferences are held by the staff every week, when the child's progress is discussed and assessed.

If the parents are young and willing to learn, they too are asked to come and see the psychotherapist; and as a result a good deal of teaching is given in the principles of mental health. After the child's first few weeks in the school, he is allowed to go home for every other week-end; and the children all recognise this as a first step towards going home for good. His parents fetch him on Friday evening and return him on Sunday evening, when the headmaster, the psychiatric social worker, and the house matrons are there to receive them, and to have a talk about the children. The link between the school and the parents is thus very strong.

THE CHILD'S PROGRESS

In school the children do a good deal with their hands—painting, modelling, 'Meccano,' the making and baking of pots, and the construction of glove-puppets. Every child is taught woodwork, in an out-house dedicated to the purpose, and he is allowed to take home his constructions—aircraft, simple bookcases, and the like—to keep at the end of the term. Apart from this, the staff give much serious thought to the teaching of reading, for nearly all these children have great difficulty in learning to read. However, as soon as a child manifests an interest in books the teachers follow it up, and help him to master reading by whatever method seems to suit him—phonetic, look-and-say, or even the time-honoured "C-A-T, cat" system, which some children seem to prefer.

Once a child is responding in the classroom, and is beginning to overcome his emotional problems, he is allowed to attend the local primary or secondary school, and wears cap and blazer of that school like the rest. This is recognised by the children as an advance in status, and a

step towards going home for good. The school usually discharges half the children on the roll every year, and in the five years since it was opened 99 have gone home improved—in most cases to homes which have also improved. Some 80% of those who have been discharged for two years and over were going on satisfactorily at follow-up.

It seems that Bredinghurst goes far towards fulfilling the criteria for schools for maladjusted children set out by Dr. Mary Burbury on p.1251.

THE WORK OF C.I.O.M.S.

THE Council for International Organisations of Medical Sciences was founded in 1949, under the joint auspices of W.H.O. and UNESCO. (At first it bore the name of Council for the Co-ordination of Medical Science Congresses.) By acting as a registry office for international meetings C.I.O.M.S. obviates the clashing of dates, and it is often able to persuade organisers to group their congresses so that interested persons can attend more than one. Thus a congress on cardiology has been arranged in juxtaposition to one on internal medicine; a congress on cancer was timed in conjunction with one on radiology; and psychiatrists were able to attend consecutively congresses on mental health and criminology as well as psychiatry.

The Council has also organised a number of important symposia, often at the time of a congress. In 1952 four of these were held: on experimental diabetes, the pathogenesis of arteriosclerosis, cancer of the lung, and hæmophilia. These informal international round-table conferences are of special value in that they may be held in distant centres which are not always convenient for the staging of a major convention. A logical development from the international congress and symposium is the organising in the same place, immediately before or afterwards, of an international postgraduate course, so that full use can be made of the services of the world leaders of the specialty who have congregated. The Council has now arranged several such courses.

The Council gives financial aid to international congresses for the initial organisation and also for securing speakers who might otherwise be unable to attend.[1]

PLANNING A CONGRESS

In September, 1952, a conference took place in Paris of key officers of recent international congresses; and their findings are included in an account of the planning and organisation of such meetings.[2]

The first international societies came into being at the end of the last century. More recently such societies have tended to develop into instruments of research, enabling men with different national backgrounds to work side by side.

Thus the social side of a congress is as important as the scientific side. "Congressists" should be encouraged to get to know each other early in the meeting. There are many ways in which organisers can help to achieve this end. Buffet suppers, for instance, are preferable to sit-down dinners, because they allow of more mixing; while evening dress should be optional and receptions free so that no-one need feel unable to attend.

The Council urges that the international society responsible for a congress should determine the pattern of the congress and the main subject to be discussed, although obviously it is seldom possible for the society to work out all details and select all the speakers; much of this work is better left to the local committee, which must, however, take care that the host country does not appropriate more than its share of the programme. The secret of good congress planning is to plan early; for all local organisers learn, often to their cost, that international correspondence is slow. The establishment of national committees to screen all material offered to the congress is an excellent way of securing international coöperation.

The president or chairman of the local group and the secretary-treasurer are the key officers, but their exacting work can be greatly eased if subcommittees play their proper part: the two most essential ones are the programme and the social-functions subcommittees. A competent secretarial staff should be engaged early on and at once be allotted adequate space, for near the time of the congress it is inconvenient to move a growing secretariat into new premises. A stipendiary executive officer fully conversant with congress technique can be a boon to the organiser of a big congress, but he cannot have the same knowledge of the personalities of participants as has the amateur who elects to run the congress for his professional colleagues.

Nowadays a popular form of congress pattern consists of principal papers from invited speakers ("rapporteurs"), followed by critical or even contradictory papers from other distinguished leaders who have enjoyed a preview of the "rapporteurs'" contributions, before general discussion is permitted. An alternative is to have invited and proffered papers grouped appropriately and each followed by discussion. Discussion has been found to be at its liveliest, however, at open symposia, especially when these are not too large; here a given topic is discussed by a panel of experts before an audience which is entitled to take part in an exchange of views. At all congresses, however, an opportunity should be given for all to speak, especially since at present some members are only allowed by their employers or government to attend if they contribute to the meeting. The reading of papers in title only is to be deprecated, because some of these papers may deservedly provoke a good discussion. If necessary simultaneous sessions should be employed to exhaust the agenda. The suggested time for a proffered paper is ten minutes, with five minutes for a discussion. 1000 words can be delivered in ten minutes; but each lantern-slide, if explained, must be reckoned as the equivalent of 50 words.

Abstracts are essential; for they not only enable national committees to evaluate the papers but allow of translation into other languages. It is recommended that the closing-date for the receipt of abstracts, which should not exceed 200 words, should be six months before the congress.

Visual aids, such as the cinema and television, should be encouraged; they help greatly to minimise the ever-present language difficulty. The scientific exhibition, or demonstrations, encourages direct exchange of information and the making of valuable contacts. The trade exhibition, too, is valuable; for the renting of space can be an important and legitimate source of congress revenue.

The greatest anxiety and expense for the organiser is over-interpretation. For small meetings, and especially those confined to two languages, the consecutive technique is suitable and has the advantage of not requiring expensive equipment. For big meetings, however, simultaneous interpretation, if carried out by experts, is to be preferred. But the interpreters must not only be excellent linguists: they must be experienced in medical terminology. Indeed, they should study the papers in advance.

C.I.O.M.S. has valuable advice to offer on the more technical points of congress advertising, budgeting, enrolment, registration, and programme printing. Hotel accommodation is best left in the hands of travel agencies, but hostel accommodation and private hospitality should be provided and encouraged.

1. *C.I.O.M.S. Bulletin*, 1952, 3, no. 1–2. The editor's office is at Unesco House, 19, Avenue Kléber, Paris 16e. Annual subscription 8s. or $1.60; no payment required from universities, medical institutes, or medical organisations.
2. *Ibid*, 1952, 3, no. 3–4.

A special section of the report deals with the psychology of international gatherings. Every effort should be made to make visitors feel at home, and interpretation should be provided not only at the scientific meetings but also at the formal parties and excursions. All countries should have an opportunity of providing chairmen and opening speakers. While not all may agree with the famous anthropologist who said that the makings of a good congress are music, flowers, and flags, most will acknowledge that its success does not depend only on the scientific fare.

OTHER WORK OF C.I.O.M.S.

The funds of C.I.O.M.S. are derived from W.H.O., UNESCO, and the supporting societies. Half of the revenue goes on grants for congresses, and a fifth is devoted to financing symposia and advanced courses. New projects are envisaged by the Council, which now feels ready to undertake greater responsibilities in the field of international medical science. For instance, this year it has published a directory of the international organisations of medical sciences.[3]

The first part of the directory lists all international non-governmental organisations under subject headings. The second part gives the national associations affiliated to each international organisation.

It is also responsible for the setting up of an international commission on anatomical nomenclature, and it gave financial support to a similar body on cancer nomenclature. At present it is engaged on the compilation of an anthology of psychiatric usage, while recently it convened a meeting of senior executive officers of national research organisations to discuss the recruitment, training, and careers of research-workers in the medical sciences. But perhaps its most ambitious undertaking will lie in the direction of trying to integrate medical bibliography and literature, and more particularly indexing and abstracting. A joint meeting of the C.I.O.M.S., UNESCO, and W.H.O. is to be held shortly to discuss "medical documentation," and to determine which problems are suitable for international action and in particular for action by C.I.O.M.S.

WELLCOME RESEARCH LIBRARY

Development at the Royal Society of Medicine

ON Dec. 4 Lord Woolton, in the absence owing to illness of the Marquess of Salisbury, opened the Wellcome Research Library of the Royal Society of Medicine.

Sir FRANCIS WALSHE, F.R.S., the president of the society, paid tribute to the foresight and generosity of the Wellcome Trust. It was a remarkable achievement for a small body of private people to establish a library of over a quarter of a million books and to provide for its maintenance, growth, and services out of their own resources. But the library had outgrown the society's strength; and the gift of £125,000 from the Wellcome Trust was timely.

Sir HENRY DALE, O.M., F.R.S., chairman of the Wellcome Trustees and a former president of the society, recalled how the trustees first helped the society with a gift of £80,000 for additional library accommodation after the second world war. Since then they had given a further sum of £45,000, and for the next ten years the trust was going to pay the subscriptions of some 300 Wellcome associates, chosen among young graduates who would not otherwise be able to afford the subscription. Many of those already elected were young overseas graduates studying under the British Post-graduate Medical Federation. Though a permanent solution had not been found for all the problems which faced the society, Sir Henry was sure that the library, which was a national and imperial possession, would not be allowed to be lost.

Lord WOOLTON was impressed that some 50,000 "occupants of chairs" used the library each year and that provincial members borrowed 80,000 volumes a year. With 5000 volumes a year being added, he could see there would be difficulties ahead. "The Government is much concerned that the findings and records of scientific advance should be made as widely available as possible through the adequate service of technical libraries," he continued. "The Lord President's office is considering various ways of meeting the present specialist library requirements." The library would become an increasing strain on the resources of the society; already it was costing about £25,000 a year. It might well be that before long the society would wish to consider associating itself with other more general schemes for the supply of scientific literature, which the Government had in mind. It seemed inevitable that the many interests in this field must agree to collaborate if the public needs were to be met within the financial resources, not only of the society, but of the country. Any vast project for a new national medical library was bound to be extravagantly and even impossibly expensive. Collaboration was better than competition, and the Government would welcome the opportunity for discussion when the time was ripe.

A vote of thanks to Lord Woolton was proposed by Lord WEBB-JOHNSON, chairman of the building committee; and afterwards Lord Woolton and the guests inspected the new library.

The architects are the late Mr. J. J. Joass, F.R.I.B.A. (who designed the original building), and Mr. Lesslie Watson, F.R.I.B.A.

HEALTH RESOURCES IN THE UNITED STATES

THE Brookings Institution has been responsible for a number of long-term studies on health and welfare in the United States. Anyone who doubts the value of statistical inquiries will do well to read a study from this institution, on health resources.[1]

This investigation was undertaken with several objectives in mind, including the ascertainment of the extent of health resources, the description of major private and public health programmes, and the establishment of a basis for further study. Dr. George W. Bachman and his team have divided their survey into three parts concerned with: (1) the health of the nation, as shown by vital statistics; (2) the personnel in the health services; and (3) these facilities and services.

STATISTICS

Between 1900 and 1950 the death-rate dropped nearly 45%, and life expectancy increased almost 37%. The death-rate for infants under 1 year dropped from 162·4 per 1000 live births in 1900 to 31·3 in 1949. The investigation shows clearly the effects of increasing age, for more than half the hospital beds in the United States are for long-term chronic illnesses. The diseases in respect of which the death-rate has increased are primarily those of middle and later life.

Returning for a moment to the infant-mortality rate, for every 1000 babies now born some 130 live who would have died fifty years ago. "It is also known that of the thirty or so deaths which *did* occur among those babies, at least a fifth were preventable in the light of present knowledge—in some areas of the country infant death rates are consistently at least a fifth below the national average, while in others they are consistently above the national average."

3. *Ibid*, 1953, **4**, no. 1–2.

1. Health Resources in the United States: Personnel, Facilities, and Services. GEORGE W. BACHMAN and associates. Washington, D.C.: Brookings Institution. London: Faber & Faber. 1952. Pp. 344. 36*s*.

It is, however, in the variations in level of health by district, sex, and colour that the statistics are most revealing. Non-white males, for example, have a much higher death-rate for vascular intracranial lesions, chronic nephritis, tuberculosis, diseases of the respiratory system, syphilis, and accidental death. Non-white females also have high rates for the same conditions, except accidental death. The Southern and South-western States have the highest mortality-rates, and in relation to population they have the fewest hospital beds and medical personnel. The three northernmost New England States—Maine, New Hampshire, and Vermont—have a high percentage of old people in their population and a relatively low birth-rate.

It would be interesting to know what some of our maternity and child-welfare experts would say of the following conclusions:

"In the great majority of cases, births which take place in hospitals are less likely to result in death to either mother or infant. The hospital delivery to some extent reflects a total pattern of care or a non-hospital delivery reflects the absence of that pattern: mothers who give birth in hospitals are more likely than others to have had some prenatal care and hence are less likely to be delivered of stillbirths; they are more likely to receive continued medical care, with less chance of death to the infant in the first year of life."

It is also noteworthy that over one-tenth of all infant deaths in 1949 occurred within the first hour of life; and the data on urban first-hour death-rates indicate a sharp difference in mortality risk for babies born in hospitals and babies born outside of hospitals, even though in the United States as a whole some 95% of all live births in 1949 were attended by a physician. Indeed it is in the use of midwives that the greatest difference between the U.S.A. and this country is evident. In thirteen States in 1949 the proportion of live births delivered by a midwife was less than 0·5%, and in three States none was so delivered. In one State—Mississippi—the figure was 20·1%.

In the Pacific States of Washington, Oregon, and California the percentage of infants born in hospital reached the extraordinary figure of 98·6 in urban areas and 97·1 in rural areas. The study of maternal mortality statistics also brings out clearly the differences between rates for non-whites and whites. "Among the whites about one woman age 20 to 24 died as the result of pregnancy per 2000 live births, whereas among the non-whites the ratio was about one in 500." The death-rates for infants of 1–12 months were 8·7 per 1000 live births for whites and 17·4 per 1000 live births for non-whites.

The American investigators use the term "immature infants" to describe those born either too soon or with a significantly subnormal body-weight; and it is estimated that 5–11% of live births fall in this category. In 1949 the estimated death-rate resulting from immaturity was 16·5 per 100,000 total population, making it one of the major causes of death in the nation. The rates for non-whites were almost exactly double those for whites. Nearly all the States require a record of the infant's birth weight on the birth certificate.

The morbidity studies show that women are more often ill than men, and that chronic diseases are responsible for a very high proportion of the days of disability. The figures also show that the disabilities of persons 65 years of age and over arise primarily from chronic illness. In the words of the authors:

"A country with an aging population must look forward to a constantly increasing aggregate number of persons disabled by illness for 12 months or more, unless it can achieve success in combating chronic illness and the degenerative diseases."

In 1947 Blue Cross participants on the average went to the hospital more often than did the highest-income class of whites in 1928–31. The factors involved are: (1) increased hospital facilities, (2) transfer to hospitals of many cases previously cared for in the home, and (3) the tendency of insurance plans to encourage hospitalisation.

PERSONNEL

Health personnel increased by about 40% between 1940 and 1950. Physicians increased by 17%, auxiliary nursing personnel by 98%, psychiatric social workers by 35%, psychologists by 166%, and sanitary engineers by 129%.

"One of the results of the uneven rates of growth [for different professional groups of health personnel] is that the major professionals make up smaller proportions of the health labor force than ever before. Physicians, for example, who accounted for about 20 per cent. of the 1940 total dropped to 16 per cent. of the 1950 total. Professional nurses also decreased, from 30 per cent. in 1940 to 26 per cent. in 1950. In contrast to these decreases was the proportionately large gain in auxiliary nursing personnel, from 21 per cent. of the 1940 total to nearly 30 per cent. of the 1950 total."

Of the *physicians*, 36% are general practitioners, 11·4% are general practitioners with part-time specialties, and 27% are full-time specialists. "Full time" in this connection means those whose practice is limited to a specialty. Between 1940 and 1949 the number of full-time specialists increased by 70%, while the proportion of general practitioners, including part-time specialists, declined by about 13%. The median age of physicians in 1948 was 44·4 years.

In the United States there are 86,870 *dentists*, of whom 95% were in active practice in 1950. Only 3·1% of these were in federal government service. Recognised dental specialties include orthodontics, pædodontics, periodontics, and prosthodontics, in addition to oral surgery, oral pathology, and public-health dentistry. The mean age of dentists was approximately 48 years; and, although the dentists in the year sampled (1949) were older than those investigated in 1940, "continual improvement in techniques and increased use of dental hygienists and other assistants probably resulted in greater productivity."

The most dramatic changes are in the "*other health personnel*," such as dietitians, laboratory technicians, medical record librarians, medical social service workers, occupational therapists, physical therapists, practical nurses, and X-ray technicians. The over-all increase in the group described under this heading is 70% in the years 1940–50. The vacancies in the eight categories numbered almost 47,000, with an estimated additional 77,000 needed in the next five years.

Mention has already been made of the decline in *midwives*; their numbers dropped from 62,000 in 1923 to 18,925 in 1950. "The downward trend is attributable to the improvement in economic status of the population, enabling the use of medical and hospital services in preference to midwives, and the increased stringency of licensure." Nevertheless, "the midwife remains indispensable in areas where medical and hospital facilities are lacking." Most midwives practise in the South and among non-white members of the population living in rural parts. More than a third of all midwives in the United States were in Texas, Mississippi, and Virginia.

Dental hygienists numbered 7000 in 1950—an increase of 40% over those employed in 1940—and it is computed that at least 15% of the volume of dental services could be performed by hygienists.

In 1950 75,000 *social workers* were employed, of whom 3000 were in the field of general medical care and 2250 in mental hygiene. But in 1940–50, whereas the number of social workers in a general medical setting increased by only about 21%, the number of social workers in the psychiatric or mental-hygiene setting quadrupled.

Dietitians and nutritionists formed an important group numerically; but their importance is shown in another way, for the American College of Surgeons requires the food services in hospitals they approve to be administered by a person who meets the requirements of membership of the American Dietetic Association. The function of public-health nutritionists is defined as primarily to impart the principles of good nutrition to groups which in turn reach the public.

Optometrists—i.e., specialists in the conservation and improvement of eyesight—increased by 71% in the ten years. The average case-load of *chiropodists* in 1949 was 26 patients per day for 220 days per year; and an estimated total of 6,639,000 patients were treated during 1950.

Perhaps the most startling difference is in the status of *osteopaths*; for in 34 States and the District of Columbia the graduates of colleges of osteopathy are eligible to be licensed to practise medicine, including drug therapy and operative surgery; in all but two States they are licensed to practise obstetrics. An examination of the case-load for a week in May, 1950, showed that nationally there were during that week 74·2 patients and 85·9 visits per osteopathic physician.

Chiropractic is "a system of mechanical therapeutics consisting of a search for vertebral dislocations and, if found, their reduction by manipulation to relieve pressure on the nerves." In 1950 there were approximately 1500 chiropractors in active practice.

Veterinarians figure prominently among the health personnel, and the reasons are set out under four headings. Firstly, the veterinarian contributes to the control of animal diseases transmissible to man; secondly, he helps to maintain the present high nutritional level of the American people by controlling the health of food-producing animals; thirdly, the military veterinary services protect the health of the Armed Forces by inspecting food for wholesomeness and quality; and fourthly, many fundamental discoveries in medicine have come from the veterinarian—for example, dicoumarol and B.C.G.

Sanitary engineers have doubled in number since 1940, and about half are in public employment. Their duties include community planning, the design and operation of water, sewage, and industrial-waste treatment plants, and many other duties which in Britain fall to the medical officer of health and sanitary inspector.

CARE OF THE AMERICAN INDIAN

One of the most interesting parts of this book is the section dealing with the care of the 400,000 American Indians. In 1789 the War Department was given control over Indian affairs, and the Bureau of Indian Affairs was established in 1824. From about 1832 Congress voted a sum of money annually for the prevention of disease among the Indians; and in 1849 the responsibility for medical care was transferred to the Department of the Interior. Since 1924 all Indians have had citizenship rights; but the federal government has continued to provide medical services for the indigent, and, because of their general economic conditions, most Indians are eligible. Indian health problems are significantly different from those of the general population: "The major problems are tuberculosis, high infant mortality rates, diarrhea and dysentery, trachoma, poor nutrition and dental caries." The incidence of tuberculosis is very high indeed.

In many instances the hospital staff consisted of only one physician per hospital, and most reservations have only one nurse. In many places, because of the language barrier, each public-health nurse must have a driver-interpreter.

Public Health

Action against Smog

AN interim report [1] by the Committee on Air Pollution (the Beaver Committee) was issued last week, when Mr. Harold Macmillan, Minister of Housing and Local Government, made a statement in the House of Commons (see p. 1269).

The report recommends the following main precautions to be taken immediately:

1. Warnings to be issued by the Meteorological Office, in particular through the B.B.C., of areas of normally high pollution in which serious fog is expected to persist for at least 24 hours.

2. Advice to the public and industry on action to alleviate "smog" and its effects. Nearly half the smoke comes from house chimneys and about an equal amount from industry.

The committee urges that householders in large towns who depend on solid fuel and who normally burn coal should lay in a stock of, say, a hundredweight of coke or other smokeless fuel for use in periods of persistent fog. A mixture of coke and coal will burn reasonably well and will greatly reduce smoke. When persistent fog is forecast:

1. Householders who can use only coal should take special care not to make more smoke than can be helped. Fires should not be banked up at night.

2. Those who can use smokeless fuels should confine themselves to those fuels during periods of fog.

3. Rubbish should not be burnt nor bonfires lit while the fog lasts.

4. The general public should refrain from bringing motor vehicles into densely populated areas.

5. Less "smog" will find its way indoors, and rooms will be kept warmer, if draughts can be prevented.

6. Elderly people and those suffering from chronic chest and heart conditions would be well advised to keep indoors and to rest as much as they can if the fog is very thick. If they must go out they will find that a closely fitting simple gauze mask, or even a woollen scarf wrapped round the mouth and nose, will give some relief by filtering out some at least of the solid contents of "smog."

Regarding industry the committee recommends that smoke-control measures should be brought up to peak efficiency at once and checked frequently throughout the winter; that special efforts should be made to prevent heavy smoke when stoking; and that a continuous check be instituted against the emission of dark smoke. This check can best be made by installing a simple smoke-density indicator.

The report remarks that it has been estimated that in the London "smog" of last December up to 60% of the smoke was due to domestic fires. "It follows that a first, immediate and stubborn obstacle to the reduction of smoke is the preference of the majority of people for traditional methods of heating. The need for education and training in these matters is urgent and vital."

"It is," says the committee, "simply a question of balancing the cost and inconvenience of enforcing a more efficient and scientific use of our fuels against all the advantages to be obtained in health, convenience and economy from a clear atmosphere. This problem, with all that is involved in a real attack on the menace of air pollution, is one which must be faced."

1. Interim Report of the Committee on Air Pollution, Cmd. no. 9011. H.M. Stationery Office. Pp. 31. 1*s.* 6*d.*

Infectious Diseases in England and Wales

Disease	Week ended November			
	7	14	21	28*
Diphtheria	18	26	28	16
Dysentery	358	370	362	399
Encephalitis:				
Infective	10	..	6	1
Postinfectious	..	1	1	..
Food-poisoning	138	164	132	121
Measles, excluding rubella	1030	823	793	875
Meningococcal infection	21	30	36	32
Ophthalmia neonatorum	26	32	25	26
Paratyphoid fever	9	1	9	3
Pneumonia, primary or influenzal	507	534	584	557
Poliomyelitis:				
Paralytic	60	66	54	50
Non-paralytic	34	29	34	27
Puerperal pyrexia	205	246	223	211
Scarlet fever	1187	1400	1613	1484
Smallpox	..	..	..	..
Typhoid fever	3	1	2	2
Whooping-cough	2175	2410	2510	2608

* Not including late returns.

In England Now

A Running Commentary by Peripatetic Correspondents

MY gardening diary says that this is the time of year to take stock of the gentle art, to make a critical post-mortem examination of last season's living beauty, and to conceive the embryo of next year's brilliance. But the diary reckons without the hazards of country life. Paragraph by paragraph we punctuate the text with hollow laughter.

Prick holes in the lawn to aerate the turf, says the diary; fill in the craters dug by the dogs, we reply. Your lawn can be greatly improved by spraying with the new hormone weed-killers, runs the book; we could tell them a thing or two about hormones on grass, lovely green rings of succulent turf where the bitches have squatted, in fertile contrast to the withering squirts of the dogs.

Vivid memories spring to mind. The puppies chewing off the daffodils, rolling flat the stocks; the cats finding easy digging in the seed-beds; the mice rooting up the peas; and the hens scattering the polyanthus with those disdainful back-thrusts reserved for all inedible obstructions. The rabbits' lolloping breakfasts along the dahlia rows. Wire your garden against rabbits, says the diary; shiver at dawn in your pyjamas by the bedroom window with a ·22 rifle, we sadly reply.

The winds of March bring more than the daffodils. They bring the hungry in-lamb ewes down to the home pastures. Not even a five-foot dry-stone wall will stop their quest for greenery. Prune your plants well back for vigorous growth, says the text; grant that the nibbled stumps will revive, we pray. But worse has yet to come, the silly beasts panic into the roses, entangle their fleeces on the thorns, and avulse the entire bushes, roots and all. One fat ewe carried for weeks on her rump the proud label "American Pillar" as she trailed our five bob's worth in open mockery.

Then the cows come out to grass—our grass and our vegetable garden. Cows in the garden can lick bulls in china shops any day. They are most unpleasant at both ends. For one thing, they have such an enormous axle-load that all our lettuces are plunged irretrievably into the depths, and we are left disconsolate with a pock-marked wilderness. As a final gesture the creatures charge through the raspberry canes, emerging festooned with a tangled wreckage of plants, wire, and bamboo. Their owner hopes that they haven't been poisoned by eating our yew trees. We favour wing of bat.

What remains of the garden then qualifies to endure the onslaught of footballs, cricket balls, tennis balls, and arrows, lethal not so much per se as by their attendant propensity for getting lost. The grooves of tricycle wheels snake across the lawn, the ends bearing witness to televising dirt-track technique. From such memories our green fingers close the diary with foreboding. We breathe a silent prayer of thanks that no-one near keeps pigs.

* * *

It has been hinted that the new examination technique, recently described in this journal, may have an effect on future graduates; and as one who believes in keeping upsides with medical progress, I have already introduced the new doctor-patient technique into my practice. Last night, for instance, as my patient hobbled through the surgery door, I snarled: "You want—Indicate with a cough your reason for coming here tonight.

(*a*) A certificate, tonic, line for glasses and a roll of cotton wool for wee Jeannie.
(*b*) To get in out of the rain.
(*c*) A check-up, going-over, sounded, given the once-over and a smog mask.
(*d*) Nobody else will talk to you."

Silencing his feeble tale I resumed: "Have you

(*a*) A cruel pain.
(*b*) Something you can't describe but comes often especially at night what with the neighbours and all.
(*c*) Blackouts and coming all over queer.
(*d*) A gastric stomach."

We were progressing. I continued: "Is the pain

(*a*) Round the back, working to the front and you're afraid you'll be taken serious if they meet.
(*b*) Something horrible when you bend.
(*c*) There because the foreman has a spite at you and put you to heaving coa l which is Joe Bloggs's job by rights."

Barring his exit I urged him to answer quickly "true" or "false" to the following questions:

"(*a*) You wish you'd stayed at home.
(*b*) You feel much better.
(*c*) Doctors are grossly underpaid."

I met my patient in the street this morning and he looked at me queerly, but I suppose medical pioneers must expect some setbacks.

* * *

Women can be annoying creatures. I had just finished re-reading some of the Sherlock Holmes stories and was explaining to my wife that Holmes was based on a well-known doctor. I related a few examples from my own experience to illustrate the deductions that might be drawn from fine observation. At that point the telephone rang. "That'll be Millie," said my wife rising to her feet. "I know her ring." Later, when I was patiently inquiring how she could differentiate a telephone bell, our door buzzer sounded. "Oh," she said, "that's Jim and he sounds cold." It was Jim, and he was cold. I went back to my stories, but somehow they had lost their flavour.

* * *

As a conscientious M.O.H., I have been put in a quandary. Shall I or shall I not advise my authority to accept the Ministry's latest suggestion and offer B.C.G. vaccination to school-leavers? If B.C.G. is good for contacts, it may protect children when they leave school for the wider world of exposure. On the other hand, I am coöperating in the M.R.C. trial to find out how worth-while mass vaccination of this age-group is. To take action now is rather assuming an answer before the result is known. I was mulling this problem over in my head yesterday evening while I read my son to sleep with *Through the Looking-glass*. Later, drowsing myself, B.C.G. and the book began to get mixed up.

"Does B.C.G. work?" asked Alice. "In some people," the Duchess replied, "but we've arranged a trial to see if it would be useful in school-children." "How long will the trial take?" Alice inquired. "About three years," answered the Duchess. Looking around, Alice noticed crowds and crowds of children carrying cards. She asked who they were. "Those are school-children being given B.C.G.," said the Duchess; "every one of them can have it." "But I thought you were having a trial to see if it would do them any good," said Alice, puzzled. "That's quite right, my dear," rejoined the Duchess, "but you see we're having the verdict first and the trial later." "Very interesting," commented Alice, as she went to get her own card.

* * *

I am often glad that my duties do not include teaching; but then I always have been the sort of chap whose experiments never quite came off. Recently, having been asked, we explained to our three children that human babies, unlike kittens, were born with their eyes open. With my luck in these matters I might have suspected that facial œdema would keep our new arrival's eyes closed for four days.

* * *

She would none of all your posies?
Bade you gather her blue roses?
What a curious neurosis.*

Half the world you wandered through
Seeking where such flowers grew?
Really, what a thing to do.

Cases both, quite obviously.
You, more fortunate than she,
Made a good recovery.

Tell me now: did you enlist
The aid of a psychiatrist,
Or spontaneously untwist?

* R. Kipling's description of this case appears in *The Light That Failed*; p. 633.—ED. L.

Letters to the Editor

THE INSULIN MYTH

SIR,—An E.C.T. myth appals me! I must disown it and explain that to ignore E.C.T. when discussing insulin is impossible, for, to repeat, it is so often mentioned as just another manipulation of the insulin-coma ritual. I wanted to make clear that my target was insulin, and that such dubious benefits as physical treatments confer in early schizophrenia could more safely and cheaply be obtained by E.C.T.

Its effect is unique in the chronic malignant variety, while relapse and remission within a few days of withdrawal and re-application are familiar with E.C.T. and unknown with insulin; these points were cited to support my view and as an indication, possibly, of some specific value. To avoid more red herrings across the trail of insulin, I must, as he will understand, leave unanswered here Dr. Hunter's objections (Nov. 28) to my unscientific attitude to E.C.T. On other points, his impressive support and that of Dr. Gibson (Nov. 21) and Dr. Jarvie (Dec. 5), is most pleasing.

As for the extraordinary misconstruction that Dr. Linford Rees (Nov. 28) makes of my article, which he takes to be a special plea for E.C.T. based on a series of my own, it will be recalled that these figures, mentioned in passing, in a bare dozen lines, were given simply to suggest that the prognosis of early schizophrenia may not be quite so black as is often assumed. They gave no support whatever for E.C.T. or for any treatment at all. Further, in these same lines, and as the subject of a whole paragraph later, I discussed the time factor relating response to treatment. This Dr. Rees accuses me of ignoring.

The insulin myth is, I think, so well demonstrated by Dr. Mayer-Gross's work,[1] I am sorry, now, that I did not refer to it because of certain details. My reason for this was that at least half his 454 cases at Dumfries were given adjuvant E.C.T.—a point he does not mention in his letter. A significant indication was failure to improve after three or four weeks of insulin comas; and, of those with lasting improvement, some 65–70% had had E.C.T. Though this objection to this series proving any worth for insulin is enough, the "optimal" control group he refers to for comparison is also not above criticism. It consisted[2] of voluntary patients at the Maudsley in 1935, and it is widely held that voluntary patients, with their less florid symptoms and insidious onset, have a worse prognosis.[3] Dr. Mayer-Gross and his colleagues actually indicated this, and explained that there were difficulties in accommodating acute cases.

The work on conditioned reflexes in rats and on metabolism, from which Dr. Mayer-Gross draws a satisfying rationale for the use of insulin in a human mental illness with no known metabolic pathology, is not, I think, satisfying enough to justify a risky treatment otherwise so ill-founded.

To question a myth is to invite counterblast as well as criticism, including, of course, Dr. Sargant's conviction that truth resides with majorities. I think he misquotes (Nov. 28) a report to the International Congress in Paris. This report was by Lopez-Ibor[4] and not by Neveu; at all events it made clear that the value of insulin might reasonably be doubted, and suggested that E.C.T. was preferable to insulin in certain types of schizophrenia. Dr. Sargant's concern for the suffering my article may cause will be all the greater if he reaches for a standard textbook[5] and reads the very lukewarm opinion of insulin there, and for the most authoritative book[6] on physical treatments in the language, where he will find little to choose between E.C.T. and insulin in acute schizophrenia. This evidence would perhaps encourage Dr. Friedmann (Dec. 5) to be less certain that it is I who ignore what I dislike and that he has proved the value of insulin while combining it with E.C.T.

Dr. Rees and Dr. Sargant seem to accuse me of "selecting" my references. I made it clear why it was necessary and possible to consider "only some of the best known, careful, and typical reports." This is what I did, and, in fact, the missing work for which they plead contains not a single revelation that is absent from the papers I dealt with. Moreover, work supporting my case was omitted, some of which Dr. Mayer-Gross kindly pointed out. Of the 9 omissions they deplore, they have only 3 in common: the work of Dr. Mayer-Gross; Freudenberg, a paper[7] of whose I mentioned, with the brief comment it seemed to require; and Finiefs.[8] Had I included those papers they name, they could readily have found many others, all saying the same thing, with which to reprove me.

Though I drew attention to the question of percentages, I see that Dr. Rees still reaches conclusions by converting unimpressive small numbers to percentages when he refers to an 8·4% recovery-rate with insulin, compared to zero with E.C.T. in long-standing schizophrenia.[9] Actually, this means 2 patients out of 24, nor were they the hospital chronics I talked about, while the social-recovery rates in his groups, which his letter did not mention, were not significantly different. This distinction between "cure" and social recovery is always subjective.

I make no apology for confining myself to published evidence and ignoring the "impressions" of clinicians, many of whom have no experience of other approaches to schizophrenia, and who use insulin and are often encumbered by many years of it. That they will go on doing so, undaunted, does not surprise me, for there are so many other intuitions and myths dominating psychiatry.

Others matters raised in this correspondence are, I think, answered in my article, but I must comment on Dr. Sandison's enthusiasm for his new insulin unit (Nov. 21). To take his own figures in whole numbers (which I prefer to percentages), it seems that in a fair-sized mental hospital with a small medical staff, perhaps less than ten schizophrenics, in nearly two years, have made some sort of recovery, so far brief, and *perhaps* attributable to insulin—this at the expense of one treatment death.

Can anyone, who is not possessed by furor therapeutica, as Freud called it, and not hypnotised by palaver, syringes, coma, and the terror of therapeutic impotence, really believe that the risk and great expenditure are worth it?

Fountain Hospital,
London, S.W.17. H. BOURNE.

1. Mayer-Gross, W. *J. ment. Sci.* 1951, **97**, 132.
2. Guttmann, E., Mayer-Gross, W., Slater, E. T. O. *J. Neurol. Psychiat.* 1939, **2**, 25.
3. Kalinowsky, L. B., Worthing, H. J. *Psychiat. Quart.* 1943, **17**, 144.
4. Lopez-Ibor, J. J. International Congress of Psychiatry Reports. Paris, 1950; vol. 4, p. 92.
5. Henderson, D. H., Gillespie, R. D. A Textbook of Psychiatry. London, 1950; p. 415.
6. Kalinowsky, L. B., Hock, P. H. Shock Treatments, Psychosurgery, and Other Somatic Treatments in Psychiatry, 2nd ed., New York, 1952.
7. Freudenberg, R. K. *J. ment. Sci*, 1947, **93**, 9.
8. Finiefs, L. A. *Ibid*, 1948, **94**, 575.
9. Rees, L. *Ibid*, 1949, **95**, 625.
10. Loutit, J. F. Progress in Biophysics. London, 1950; p. 197.
11. Burch, P. R. J. *Nature, Lond.* 1953, **172**, 361.

RADIOACTIVITY OF TOBACCO AND LUNG CANCER

SIR,—Mr. Mulvany's letter of July 25 suggests that natural potassium may have to be added to the list of "radioactive carcinogens," of which only certain products of the radium and thorium series are so far known to have produced cancer in man.[10] The specific radioactivity of potassium,[11] however, is at least 10^{10} times less than radium and its energy dissipation in tissues 10^{11} times smaller than that of an equal radium con-

centration. Other factors will enter into the consideration of a given biological action, but such differences in physical properties suggest that a quantitative assessment of the possible dose to lung tissue should precede any conclusion that the radioactivity of the potassium content of tobacco plays a part in the ætiology of lung cancer.

The accompanying table gives results of testing the tobacco, ash, and condensed smoke of a number of samples of cigarettes in a Geiger counter of the type (M6) used by Mulvany. It will be seen that the counting-rates obtained for the cigarette ash are of the same order as those reported by Mulvany, but in this case the

RADIOACTIVITY OF TOBACCO, ASH, AND SMOKE

Sample	Observed counts per min.		Potassium per cigarette in mg.	
	Tobacco	Ash	Tobacco	Ash
Smokers' ash ..	(~2¹/₄cigs.) 21	(~22 cigs.) 207	24 ± 1·8*	26 ± 0·9
Smokers' ash (remeasured) ..	19	189	22 ± 1·3	25 ± 0·9
Smoking-machine ..	23	239	28 ± 2·1	33 ± 1·2
Smoking-machine ..	21	201	25 ± 0·8	28 ± 0·4
Condensate from 300 cigarettes	⩾ 0·35		⩾ 6 µg.	

* Errors given as standard deviations.

counting-rates have been converted to equivalent weights of potassium by calibrating the counter with potassium salts. Assuming the observed radioactivity to be due to potassium, the table gives the activity in equivalent weights of potassium per cigarette, both as tobacco and as ash. The values for the tobacco and ash are sufficiently alike to suggest that no radioactivity is lost in the process of smoking. This suggestion is corroborated by measurements on a solution in acetone of condensed unfiltered cigarette smoke kindly supplied by Dr. Clayson from the smoking machine in the Department of Experimental Pathology and Cancer Research. The conditions of this measurement favoured sensitivity, since the condensate from some 300 cigarettes was contained in the counter. No activity above background, however, could be detected in a long series of counts and the figure of 6 µg. "potassium" per cigarette in the condensate is the maximum likely figure assessed from the standard deviation of the measurement.

It may be concluded, therefore, that such radioactivity as is present in cigarette tobacco remains in the ash and that very little, if any, is transferred to the smoke. If the figure of 6 µg. is taken as representing the maximum radioactivity (as potassium) which could appear in the smoke of one cigarette, the highest radiation dose in the lung would be produced if this amount lodged as one particle. Such a particle, however, would be some 300 µ in diameter and would deliver a dose-rate to cells adjacent to it of the order of 2–3 mr per week. This is approximately equal to the dose-rate which body tissues receive continually from their average potassium content, local gamma rays, and cosmic rays.[12] For smaller particles the dose-rates would be reduced directly as the particle diameter (since the specific radioactivity of the material is constant) and would, therefore, be much less than the natural background dose-rate. Where tumours have been known to be due to radioactive materials lodged in the body, the dose-rates involved were at least 10,000 times greater than the levels considered here.[13]

The measured activity of the ash per cigarette appears to be rather higher than that of the tobacco, although the differences are hardly outside experimental error. Separate tests showed that the discrepancy was not due to the ash from the cigarette paper. It might be accounted for, however, by the average radioactivity of the air which is usually such that the filtering of a few litres of air by the cigarette could increase the radioactivity of the ash by amounts of the order observed.

Department of Medical Physics and Department of Experimental Pathology and Cancer Research, University of Leeds.

F. W. SPIERS
R. D. PASSEY.

12. Spiers, F. W., Burch, P. R. J. Biological Hazards of Atomic Energy. Oxford, 1952; p. 203.
13. Spiers, F. W. *Brit. J. Radiol.* 1953, **26**, 296.

INTUSSUSCEPTION

SIR,—I would like to comment on your leading article[1] and the letter by Mr. Jones and his colleagues[2] in Newcastle.

Acute intussusception must always be associated with pain, which varies in intensity with the type of intussusception. The pallor of the associated shock may be the only evidence of this at the time when the child is being examined. A tumour can be palpated if examined for carefully enough in every case, although an anæsthetic may be necessary to bring about sufficient relaxation of the abdominal wall to enable the mass to be felt. A bimanual examination with one finger in the rectum may help in making a diagnosis.

The duration of the symptoms before treatment is commenced is admittedly a very important factor, both in estimating the prognosis and in deciding on the best method of treatment. It is not the duration of the trouble, however, that should decide the question of operation, for one occasionally sees patients where an intussusception has been present for several days; but, because of the extreme mobility of the ileocæcal region in some of these cases, the intussusceptum does not become strangulated and the intussusception may be reduced by hydrostatic pressure. Usually, when an intussusception has been reduced in this way, the fact that complete reduction has occurred can be readily determined—and without the help of radiography. This is due to the fact that in most cases, after reduction, some of the enema passes through the ileocæcal sphincter into the small bowel, and causes an even distension of the abdomen, the degree of distension depending on the time occupied in holding in the bowel the saline or fluid used. On palpating such an abdomen, the fact that there is a considerable quantity of fluid in the small bowel can be readily appreciated, especially because, before the enema is given, the abdomen is usually soft and flaccid. If additional help is required in diagnosing complete reduction, it can be obtained by measuring the circumference of the abdomen before and after the giving of the enema. In those cases where none of the fluid passes into the small bowel, even though the intussusception has been reduced, there will be no distension, and an operation should follow.

Mr. Jones and his colleagues say that the majority of cases reported by me as having been reduced by hydrostatic pressure were admitted to hospital within twenty-four hours of the onset of the intussusception. This statement, while literally true, implies that the success of reduction by hydrostatic pressure in my series was due to early recognition and treatment. I feel sure that the majority of cases, reported by anyone, anywhere, first come under observation by a surgeon or are admitted to hospital in the first twenty-four hours after the onset of the trouble. In 30 of the 100 consecutive cases I reported[3] in 1926, the intussusception had been present for twenty-four hours or more, and there was no death in any case where the intussusception had been present for less than forty-eight hours. Another series[4] of 51

1. *Lancet*, 1953, i, 229.
2. Jones, J. D. T., Hindmarsh, D., Court, S. D. M., Jackson, R. H. *Ibid.* p. 392.
3. Hipsley, P. L. *Med. J. Aust.* 1926, ii, 201.
4. Hipsley, P. L. *Ibid*, Nov. 9, 1918.

cases showed the same proportion admitted to hospital after twenty-four hours—namely 15. Several of these were reduced by hydrostatic pressure where the duration of the intussusception had been several days, and 1 which had been wrongly diagnosed as prolapse of the rectum yielded quite readily to hydrostatic pressure after seven days.

If every case of intussusception is operated on, then at least 45% will be operated on unnecessarily. No-one can say with certainty that the opening of the abdomen of a young infant is devoid of risk. Now that we have a method whereby complete reduction by hydrostatic pressure can be diagnosed in the majority of cases, there would appear to be no excuse for operating on every case.

Sydney, Australia. P. L. HIPSLEY.

VISITING CHILDREN IN HOSPITAL

SIR,—I was agreeably surprised to read the annotation on this subject in your issue of Nov. 28. This the more as it was in one of my early writings that attention was first drawn to the detailed facts of the hospitalisation trauma as described in your opening sentence.

Possibly because of the emergencies of war-time, my original monograph [1] attracted no great public attention here. I have reason to believe, however, that there were other and more pertinent reasons for its non-acceptance. It took some years before the evidence I had marshalled was accepted in psychiatric circles: more resistance appeared from one's general medical colleagues, some of whom even today "do not believe in" the hospitalisation trauma. (A prominent member of a regional board openly denied its existence and his remarks received wide publicity.)

I consider therefore that the Ministry of Health were too precipitate in their action in attempting to impose daily visiting on recalcitrant, or at any rate unbelieving, hospital staffs. I think a good deal of educational work was needed first, to bring about what has been called an "attitude of acceptance." Otherwise, the hostility easily engendered between doting parents and a sceptical nursing staff can nullify all the benefits of the visiting. I believe that Sir James Spence had somewhat similar experiences when he first brought in the mothers to nurse their own small babies in his hosptial at Newcastle and that by suitable education (of both sides) the difficulties were smoothed out.

Visiting children in hospital is sure to cause emotional scenes at times—in the parent or the child or both—and unless the nursing staff are suitably warned and prepared, including an explanation of why all the upheaval should be necessary, the outcome, in its own way, may be every bit as bad as no visiting at all.

Leeds. H. EDELSTON.

SIGN OF ASCITES

SIR,—I would like to draw attention to a hitherto undescribed sign for the detection of free fluid in the peritoneal sac, which I have been employing, with advantage, since 1948.

The patient lies on his back with his legs partly flexed; one flank is then flicked or percussed with the firm stroke of a finger, while the opposite flank is auscultated with a Bowles chest-piece and stethoscope. Normally, it is customary to hear only one sound with each percussion stroke, but in the case of ascites, with moderate or large amounts of fluid, one often hears a reduplicated sound or even two distinct sounds.

In my experience, the double sound is about 6–8 times as common in cases of ascites than with other causes of abdominal enlargement. I therefore recommend this as a confirmatory diagnostic sign of free fluid in the peritoneal sac.

Bombay, India. RUSTOM JAL VAKIL.

1. Edelston, H. Separation Anxiety in Young Children: A Study of Hospital Cases. Genetic Psychology Monographs, 1943.

CORONARY HEART-DISEASE AND PHYSICAL ACTIVITY OF WORK

SIR,—In an earlier letter [1] I indicated that in my opinion physical idleness was a factor in the production of degenerative changes in the coronary arteries. Since this was published in 1951 there have been two statistical inquiries which have given some support to this theory. First, there was the article by Dr. Logan,[2] who stated that his findings tended to support my theory and a similar view put forward by Dr. Stocks.[3] Second, there is the elaborate investigation by Dr. Morris and his colleagues described in your issues of Nov. 21 and 28.

I think it is a pity that Dr. Morris and his colleagues took for their inquiry occupations in which the exercise difference is relatively slight. I suggested in 1951 that a comparison should be made between scholastic teachers and physical-training instructors. There may be statistical difficulties about this, but I still think that it should throw light on the problem.

I have been convinced on this matter for some time, as a result of personal observation, but I am certain that the only statistical way to convince the doubters—and until the recent articles appeared, I have found hardly any support—is to study some special group in which the incidence of coronary-artery disease is high and to show that amongst the group there is a special subgroup which has a low incidence and an exercise factor very much higher than that of the main group. I have tried to do this myself, but without financial and other support it is very difficult nowadays to undertake an inquiry of this kind. I thought that the Swiss and Austrian guides would be good subjects for investigation and I made some efforts there, but the idea of their dying of coronary-artery disease was treated with such hilarity that the matter could not be pursued.

I have for some years been trying to find support from the pathological side by trying to get detailed personal histories of the type of life which has been led in cases which I have examined post mortem and by attempting to relate these to the condition of the coronary arteries. Owing to smallness of numbers and the difficulty of getting accurate histories, these have not proved conclusive but I am persisting. Meanwhile, although I cannot be certain of the following statements, I believe that they contain some of the keys to the problem:

(1) A few people are so genetically constituted that their coronary arteries are resistant to all adverse factors.

(2) In the remainder the principal factors are of a simple mechanical nature: (*a*) the bigger the coronary arteries, the more room there is to have atheromatous plaques without disastrous results; (*b*) the faster the blood goes through the coronary arteries the less likely it is that they will develop obstructions in their walls.

(3) Assuming these statements to be correct, then the part played by exercise is clear. The more you exercise, the bigger your coronary arteries: the more you exercise the faster the blood flows through them and the more difficult it is for an obstruction to develop on the walls.

(4) I think that the exercise, to be really effective as a protector of the coronary arteries, must be fairly vigorous. The round of golf once a week is not much use.

It is probably worth while directing the type of exercise to attempt to maintain a good tone of the abdominal muscles. Vigorous contraction of the abdominal muscles must have some effect on the blood-flow in the coronary arteries. Possibly the success of clamping the aorta during attempts at resuscitation may be related to this factor.

I have for some time been considering various exercises with a view to providing the optimum coronary protec-

1. *Lancet*, 1951, i, 587.
2. Logan, W. P. D. *Ibid*, 1952, i, 758.
3. Stocks, P. *Ibid*, 1951, i, 351.

tion. I think skipping is the best, but people are intolerant of it and, for the ordinary person, dancing of the Scottish country type is the most practicable proposition.

Two final points: the most magnificent coronary arteries, related to age, I have ever seen were in a man who died recently under an anæsthetic and had an advanced degree of stenosis of the aortic valve; and I wonder why the incidence is so much lower in women.

Houston, Renfrewshire. EDGAR RENTOUL.

DIAGNOSIS OF CARBON-MONOXIDE POISONING

SIR,—The alveolar air of patients with carbon-monoxide poisoning contains a small percentage of CO, according to the equilibrium [1]

$$P_{co} = \frac{HbCO\ (P_{o_2} + 300\ P_{co})}{300}$$

where HbCO is the percentage of carboxyhæmoglobin in the blood and P_{co} and P_{o_2} are the partial pressures of CO and O_2 in the alveolar air. For example, 16% HbCO gives 1 part per 10,000 of CO.

A method of estimating such traces of CO in air quite simply and accurately has been developed,[2] using palladosulphite in silica gel. Air is sucked through tubes containing this material by means of a double aspirator which gives the correct rate of flow. A respiratory attachment suitable for obtaining an equilibrium sample of alveolar air has been designed for use with this instrument.

This method can be carried out by a semi-skilled person in three minutes and appears to offer some advantages in clinical diagnosis compared with spectrometric or titrimetric tests on the patient's blood.

Such rough tests as I have made encourage me to think that this method would be effective in diagnosis, but more experience is needed.

London, N.W.3. L. T. MINCHIN.

A CONSULTATION FEE?

SIR,—Would a shilling per consultation, either as an alternative to or as an addition to the shilling per prescription, benefit the community as a whole?

It would in the first place reduce the cost of the health service, which so far has been an embarrassment to both post-war party governments. It might discourage some of the "is-your-visit-really-necessary" patients from growing like perennials in general practitioners' waiting-rooms. It would free these overworked benefactors from attending to numerous minor complaints and so enable them to spend more time on the cases that need their care.

Indirect benefits to the community resulting from this would include: a greater proportion of the population retaining confidence in their own ability to lead healthy lives; less wear and tear on general practitioners and their wives, and consequently on their families and households; and less prescriptions being asked for and therefore less medicines being prescribed, but greater counter sales at the chemists of first-aid dressings, simple household remedies, and dietary accessories. The cost of the latter would then be transferred from the nation's to the individual's pocket, while the main costs of diagnosis, of treatment, and of ethical medicines would continue to be borne by the National Health Service.

The collection of this second "bob" is a domestic affair, the difficulties of which might be outweighed by the advantages gained. A shilling per consultation, as well as a shilling per prescription, would have the serious disadvantage that it would impose further financial burdens on those who depend on medical treatment for their health (and therefore for their happiness), and also on those who, with large families, are the first to feel the pinch caused by increases in the cost of living. But a shilling per consultation instead of a shilling per prescription has decided advantages. Although this point was the subject of debate in the earlier days of the health service, the years of experience that have since intervened may have thrown different light on the subject. It would be interesting to hear the reactions of those whom such a change would concern the most.

Woldingham, Surrey. RAYMOND L. HANBURY.

1. Henderson, V., Haggard, H. W. Noxious Gases. New York, 1943; p. 165.
2. Methods for the Detection of Toxic Gases in Industry: no. 7, Carbon Monoxide. H.M. Stationery Office, 1950. See Minchin, L. T. *Iron & Steel, Lond.* September, 1953. p. 425.

TRAUMATIC RUPTURE OF THE BILE-DUCTS

SIR,—The comprehensive review of this rare abdominal injury given by Mr. Milnes Walker (Nov. 7) prompts me to give details of a case at the Royal Hospital, Wolverhampton, 16 months ago. According to Mr. Milnes Walker's record, it would be the fourth reported since 1938 and the fifty-second in the literature.

The patient, a young, fit, intelligent man of 21, was injured in a motor-cycle accident on June 16, 1952.

On admission to hospital he was shocked, and had a compound fracture of the right tibia and fractures of the right patella and right femoral shaft. He improved considerably with resuscitation, but 2–3 hours after the accident he began to complain of pain in the upper right abdomen. There was tenderness in the right hypochondrium, and localised rigidity, with normal liver dullness. There was no sign of bruising in this area, though it was clear that the right side of his body had received the main force of the impact. Catheterisation showed a clear urine. It seemed probable that there was injury to one of the organs in the right upper quadrant, probably the liver. It was decided, therefore, to explore the abdomen, while the orthopædic surgeon, Mr. E. A. Freeman, would deal with the fractures at the same time, when the abdominal condition became clear.

Laparotomy.—There was a small quantity of thin bile-stained fluid in the abdomen and gross œdema and infiltration of bile in the free margin of the lesser omentum and in the region of the common bile-duct. There was also a small tear of the under-surface of the liver which was hardly oozing any blood at all. Careful exploration of the bile-stained tissues established the following points:

(1) At the upper end of the bile-stained tissues there was a small opening from which bile trickled, and a probe, passed through this, travelled towards the liver in the right hepatic duct, but attempts to pass it into the cystic duct, which appeared just above the opening, showed that this was torn longitudinally for about $^1/_2$ in.

(2) From the posterior lip of the opening a thin strap of bile-stained duct lining extended down behind the duodenum, presumably the posterior wall of the common duct.

(3) The lower margin of the duct had retracted behind the duodenum.

The lesion, therefore, seemed to be an incomplete tear of the common duct extending to the cystic duct, with wide separation of the ends, attenuation of the connecting segment, and considerable collapse of the lumen.

These factors made insertion of a tube difficult and stricture formation likely, while the split in the cystic duct excluded cholecystoduodenostomy as an alternative. The words of Rutherford Morison on the subject of rupture of the urethra seemed apt: "unless your skill can prevent the development of a stricture, you are presiding at the opening of a lifelong tragedy." So Mr. R. L. Benison, consulting surgeon to the hospital, was called in to help to avoid such a tragedy.

A rubber T-tube, which had to be small enough to enter the collapsed lumen, was inserted with some difficulty; and sutures, which similarly had to be few in number because of the small calibre of the duct, were inserted over the tube. Periductal drainage was established and the abdominal wall sutured.

The fractures were treated at the same time; and chemotherapy was started.

Postoperative Course.—There was some distension and sickness during the first 4 days, but a normally coloured stool was passed. Jaundice then appeared, the stools became

clay-coloured, and bile drained freely, but in diminishing quantities, for the next 18–19 days.

Cholangiography on the 23rd postoperative day showed most of the dye around the tube, but a little had passed into the duodenum. The tube was then gradually clamped over a week, and then kept continuously closed for 3 days, with no ill effects except a little local discomfort. Further cholangiography showed that the dye passed into the bowel. The tube was removed on the 39th day.

The patient has been quite well ever since as far as his abdomen is concerned. The fractures required prolonged rehabilitation, but he is now fit for light work.

The outstanding features of the case were:

(1) The extreme collapse of the common bile-duct, rendering anatomical identification in the bile-soaked tissues difficult.

(2) The involvement of the commencement of the cystic duct in the tear, which excluded the use of this duct as an alternative bile channel by means of a cholecystenterostomy.

(3) The relatively smooth convalescence without as yet, 16 months later, symptoms of stricture formation, which would usually be expected within a year if this was going to be a troublesome development.

(4) The laceration on the under-surface of the liver, which suggests that the force may have been in such a line as to cause the liver to crush or tear the ducts against the vertebræ—a mechanism suggested by Lewis.[1]

My thanks are due to Mr. R. L. Benison for permission to publish these notes and for his help with the operation.

Wolverhampton. HENRY B. YOUNG.

"CHEMOTHERAPEUTIC AGENT" AND "ANTIBIOTIC"

SIR,—The purpose of my letter (Oct. 17) was to expose the implications, and possible consequences, which could arise from Dr. Erwin's "suggested" basis for "a more exact liberal definition of 'chemotherapeutic agent'" (Oct. 24). His more recent use of an "exact liberal definition" clearly vindicates my point. No-one would regard aspirin as an antibiotic simply because "a sufficient quantity destroys the life of man." All would, without exception, and unhesitatingly, regard it as a *poison*; and this quite apart from the fact that "antibiotics" act, as Professor Waksman (Aug. 22) has said, "in dilute solution to destroy micro-organisms."

"Terms," Sir, have connotations—they imply the attributes while denoting the subject. If "chemotherapeutic agent" and "antibiotic" are, as Dr. Erwin declares, "terms recently coined, and, therefore, still evolving," Dr. Erwin can scarce forbear to cheer the sanity and wisdom of Professor Waksman's sober summary: "Proper definitions are available, without sacrificing historical perspective, scientific accuracy, or current usage, and this should not be left to the whim of individuals who decide to redefine important terms according to their own points of view."

Cape Town. M. GLASS.

CIRCUMCISION

SIR,—In the literature on this subject, and in the excellent article by "Sir Daniel Whiddon" (Aug. 15), no mention is made of the fact that it is possible in normal persons, without any operation, to obtain the same end-result—namely, an exposed glans. The method is as follows:

During the year or so before puberty the boy is told to retract his foreskin and clean the glans every time he takes a bath. Gradually as puberty approaches, and as the glans becomes hardened, the foreskin is kept retracted. This has the effect of allowing the glans to grow *through* the foreskin, leaving it behind. The end-result is a penis indistinguishable from, or superior to, the most skilfully circumcised one.

Instruction in this procedure appears to be usually passed from father to son in certain families; few doctors seem to have heard of it. There is possibly some risk of balanitis, and the manœuvre should therefore be carried out preferably only under the intelligent supervision of the father.

UNCIRCUMCISED.

1. Lewis, K. M. *Ann. Surg.* 1938 **108** 237.

DEXTRAN SULPHATE

SIR,—We should like to answer Dr. Berenbaum's comments (Nov. 28) on a statement in our paper reporting the therapeutic trial of dextran sulphate. One patient (case 8) died from coronary thrombosis while under treatment. The statement that staining with toluidine-blue of histological sections taken at necropsy failed to show storage of dextran sulphate is held to be a possible misinterpretation, since it is suggested that this method of demonstrating polysaccharides is unreliable unless the material is protein-bound or otherwise rendered insoluble.

In the first place; while we would agree that toluidine-blue is an unreliable stain for *neutral* polysaccharides, since in fact it fails to stain these, in our hands it has been found capable of demonstrating, by the metachromatic reaction, concentrations as low as 1–2 μg. of *highly sulphated* polysaccharides (such as the material used in our clinical trial).

Secondly, during the preliminary biological screening of dextran sulphate, we have had available material from animals given dextran sulphates of various molecular sizes. Comparisons have been made of tissues prepared by freeze-drying techniques, by fixation, mounting, and staining in alcohol, and by the ordinary histological routine after treatment with fixatives containing mercuric salts or with formol-saline. It has been our experience that when material was demonstrable by either of the first two methods, it was also demonstrable by the use of the usual techniques in material fixed in watery fixatives.

Experimental evidence from animal studies suggests that while protein-binding is essential for the *uptake* of sulphated polysaccharides by the reticulo-endothelial cells, it is not essential for the demonstration of these compounds in the cell. For example, it has been shown that dextran sulphates of large molecular size form insoluble complexes with the plasma proteins and that these particulate precipitates are cleared from the blood-stream by the phagocytic activity of reticulo-endothelial cells. Material staining metachromatically with toluidine-blue is demonstrable as granules within these cells where it persists for twenty-eight days or longer.[1] Examination of these granules in freeze-dried material in the ultraviolet light microscope and measurement of the absorption at a wave-length of 2800A° gave no indication of the presence of protein in the phagocytosed material if the animal had been allowed to survive longer than four hours after the injection of the dextran sulphate. This suggested that the protein moiety of the phagocytosed material was split off and metabolised quickly by the active proteolytic enzymes known to be present in reticulo-endothelial cells, leaving the sulphated polysaccharide component to undergo slower katabolism.[2] This is in keeping with the findings of Kaplan et al.[3] and of Coons et al.,[4] who showed that even heterologous and foreign proteins disappear considerably more quickly from reticulo-endothelial cells than similarly phagocytosed polysaccharides.

On the other hand, it has been shown that dextran sulphate of uniformly small molecular size (such as that used in the clinical trial) does not form insoluble complexes with the plasma proteins. In our opinion, it is for this reason that, even in much greater dosage than that used clinically, the injection of such material does not result in the appearance of granular metachromatic material in the reticulo-endothelial cells of experimental

1. Walton, K. W. *Proc. R. Soc. Med.* 1951, **44**, 563.
2. Walton, K. W. *Brit. J. Pharmacol.* (In the press).
3. Kaplan, M. H., Coons, A. H., Deane, H. W. *J. exp. Med.* 1950, **91**, 15.
4. Coons, A. H., Leduc, E. H., Kaplan, M. H. *Ibid*, 1951, **93**, 173.

animals.[2] From the results of similar investigation of the material from case 8 (the only human material so far available), it appeared to us that a similar situation prevailed.

It is perhaps worth mentioning that the sulphation of dextran interferes with its staining by the periodic-acid Schiff technique (presumably by blockage of glycol groups), so that the technique of Mowry and Millican [5] is, in any case, inapplicable for use in the investigation of these compounds. Further investigation of the distribution of dextran sulphate is now being undertaken by radio-autography using dextran sulphate labelled with radioactive sulphur (S^{35}).

Department of Experimental Pathology, University of Birmingham. KENNETH WALTON.
Medical Research Council Industrial Injuries and Burns Research Unit, Birmingham Accident Hospital. COLIN RICKETTS.

A J.H.M.O. APPOINTMENT

SIR,—The letter from "S.H.M.O." in your issue of Oct. 24, which was concerned with the S.H.M.O. vis-à-vis the consultant, prompts me to describe an experience of mine as a J.H.M.O. vis-à-vis the S.H.M.O.

Some time ago I accepted a post as J.H.M.O. at a small hospital. The only other doctor at the hospital, the medical superintendent, was a consultant.

When I had been at the hospital some months it came to my notice that my predecessor as assistant medical officer, a man with the same qualifications and experience as myself, had been a senior registrar, and that he had left when the regional board decided to abolish such a grade at the hospital. During his stay there the actual "establishment" had been one consultant, one senior registrar, and one J.H.M.O., though there had never been a J.H.M.O. at the hospital before my arrival. The regional board, when they decided to abolish the senior-registrar grading, amended the establishment to be one consultant, one S.H.M.O., and one J.H.M.O. My predecessor had been offered the S.H.M.O. grading shortly before his departure, and had refused it. The S.H.M.O. post was not advertised before my arrival or during my tenure of the J.H.M.O. post.

With this information in my head, I told the superintendent that in my view there seemed to be at least a reasonable case for my applying for S.H.M.O. status. He agreed that there was in the ordinary sense of the words, but added: first, that the regional board would never upgrade a J.H.M.O. to S.H.M.O. status in a hospital and leave him in that hospital; and second, that if I approached the board on the ground that I was doing the work of one J.H.M.O. plus at least that of half a S.H.M.O., they might well see fit to advertise the S.H.M.O. vacancy. In that case, the superintendent said, someone other than myself might be appointed to the vacant S.H.M.O. post; and although there would then still be room on the establishment for a J.H.M.O., the board might think the hospital could function perfectly well with just two doctors, as heretofore. In other words, I should be sacked.

I swallowed hard at this; and in consequence of it and of certain other allied irritations, took steps to obtain a post outside the N.H.S. as soon as I could. When I announced my imminent departure, the superintendent said that there was really too much work at the hospital for two doctors, and every effort would be made to replace me by a S.H.M.O. *and* a J.H.M.O. (He also, I should add, expressed great regret that I should be "leaving him"—as he put it.) Shortly after I left the hospital, I met a S.H.M.O. from the same region. He had the same qualifications and experience as myself, and he told me that he had recently been upgraded to S.H.M.O. status while remaining in the hospital at which he had previously enjoyed J.H.M.O. status. I brought this to the attention of my old superintendent, who maintained a dignified silence.

To complete the story: soon after my entering the hospital as a J.H.M.O., my superintendent took a month's holiday, leaving me in charge. I took his place, while a locum took mine. The person who obtained the locum appointment therefore had less responsibility than I during that month. At the same time she received (in salary plus emoluments) a rate of remuneration considerably in excess of my own. I continued to draw J.H.M.O.'s salary for the month during which I did a consultant's work. Officially the superintendent of another nearby hospital "deputised" for my absent chief: in fact he visited the hospital for just ten minutes during the month my chief was away—ten fruitless minutes at that.

Accordingly, when the superintendent threw cold water on my idea of applying for S.H.M.O. status, I answered that I would not deputise for him during any future holidays. I had reached this decision, I said, *de facto* because of the treatment I was receiving in the matter of my grading; *de jure* because it is clearly laid down that J.H.M.O.s "are officers who . . . have less responsibility than other hospital officers of non-consultant status." I could hardly therefore, I said to my superintendent, deputise for a consultant in good conscience. I should be going above my station of life. He sighed as a colleague, and submitted as an employee of the board. At intervals subsequently he hinted that the time had come for him to have a holiday. On each occasion I agreed—and asked whom he had in mind as his temporary deputy. I hinted that, as I should presumably be the senior resident medical officer during his absence, I should not feel perfectly confident if his deputy were to visit the hospital at a rate of two and a half minutes a week. My superintendent took no holidays.

The following points are noteworthy:

1. That, a senior and a junior post being vacant, only the junior post was advertised.

2. That the doctor appointed was expected to assume part or all of the duties of the vacant senior post as well as his own.

3. That when he suggested he might at least apply for the senior post, he was threatened with the possibility of losing the junior post.

4. That he was told that a certain principle obtained in making appointments to such senior posts only to discover very much later that such a principle did not in fact obtain.

5. That a junior doctor was called upon to deputise for a very senior doctor during the latter's holiday, while purely paper arrangements were made for another very senior doctor to deputise and no effort was being made to fill a vacant senior post.

EX-J.H.M.O.

BARBITURATES AND ALCOHOL

SIR,—Your annotation of Sept. 12 led me to bring together some observations made during the war and more recently. Fig. 1 shows the blood-barbiturate levels of a normal person who was on two occasions given amylobarbitone ('Amytal') 0·4 g. orally on an empty stomach. Fig. 2 shows the blood-barbiturate levels of a proved cirrhotic with an alcoholic history, who was given amylobarbitone 0·2 g. orally on an empty stomach. Comparison of the two figures shows that, while the ratio of the dose to the peak blood level reached is not significantly higher in fig. 2 than in fig. 1*a* or *b*, the peak is prolonged in the patient with established liver damage.

In fig. 3 the lower curve represents blood-galactose levels in a normal person given galactose 40 g. when fasting. The test was carried out in the morning after 24 hours' abstention from alcohol. The upper curve represents the corresponding levels in the same person the morning after an evening when an excess—but not

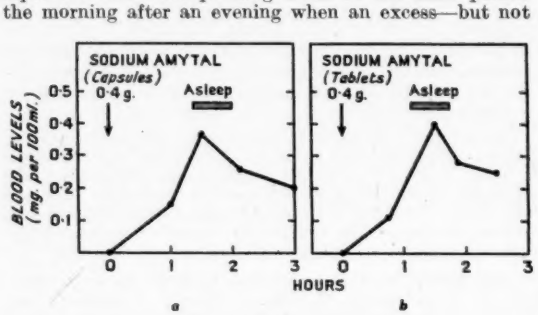


Fig. 1.

5. Mowry, R. W., Millican, R. C. *Amer. J. Path.* 1953, **29**, 523.

a vulgar excess—of alcohol had been taken. I am doubtful whether, taken by itself, the second curve would be regarded as proof of liver dysfunction; but in conjunction with the control curve it strongly suggests that the alcoholic excess had reduced the efficiency (temporarily at any rate) of this person's liver. Viewed together, the two sets of data help to explain why it may be dangerous to take barbiturates after taking any substantial dose of alcohol or if one's way of life involves regular consumption of spirits.

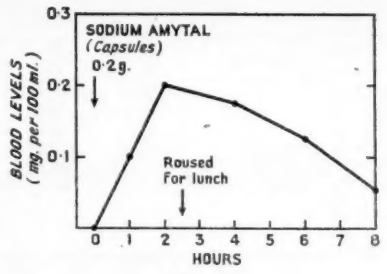


Fig. 2.

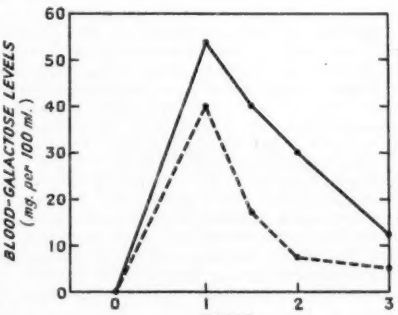


Fig. 3.

Chemical Pathology Department,
St. George's Hospital Medical School,
London, S.W.1. NICHOLAS MARTIN.

SURGICAL EMERGENCIES

SIR,—Today, when hospital planning and hospital staffing are being widely discussed, and when operating-theatres and extensions are being built or are due to be built, it seems opportune to discuss the merits of a surgical urgency unit. Urgent surgical cases constitute almost half the surgical admissions in the average general hospital, and such a unit would greatly improve their treatment.

These cases coming into hospital throughout the twenty-four hours of the day are often kept waiting. This may be caused by general-list cases blocking the general surgical theatres. Preoperative treatment, transfusions, &c., are frequently done under difficulties in a crowded ward. At night, semi-darkness in the ward and a diminished nursing staff accentuate the difficulties.

There is a strong case for having an urgency unit attached to the main general hospital of each group. The unit should be controlled by a whole-time consultant surgeon. (If acute orthopædic surgery is worthy of a whole-time consultant, acute general surgery is too.) The consultant should always be available for advice in diagnosis, and treat difficult cases himself. The duty registrar and house-surgeon from the duty surgical unit would work under him, treating the casualties and general surgical emergencies.

The urgency unit should have 5–10 male and female beds, and its own theatre, sterilising, anæsthetic, and preparation rooms. Surgical emergencies probably requiring operation would be admitted to the unit. These cases may include all instances of open trauma and abdominal urgencies. The patients would be prepared for operation, operated on, and retained in the unit until 9 A.M. the following day, when, if fit to be moved, they would be sent to the appropriate ward whose turn it was to receive urgencies, or sent home. Very few urgencies are too ill to move in bed in hospital. The aftercare of the urgent cases would be the responsibility of the whole-time urgency surgeon, with the coöperation of the surgeon in charge of the ward to which the patient is sent. Head injuries would be admitted to the unit and treated by the surgeon or neurosurgeon as deemed advisable. Orthopædic emergencies—i.e., compound fractures—would be treated by the orthopædic staff and only admitted to the urgency unit by special arrangement. Obviously local arrangements would be necessary to suit individual hospitals.

The urgency unit has the following advantages:

1. It enables urgent surgical cases to be prepared for operation or resuscitated with the maximum of convenience and the greatest efficiency, and without undue delay. All transfusion outfits and preoperative apparatus, &c., can be made instantly available and used in good lighting. By concentrating all surgical urgencies in one department there can be economy in instruments, nursing, and technical personnel.

2. The general surgical wards can have better and smoother working conditions, and they suffer less disturbance; this is especially valuable during the night.

3. The theatres serving surgical wards can be used more fully and with a more regular routine as they are not required for urgencies.

The principle of concentrating the treatment of urgent surgical cases would amply repay the public and the National Health Service. Besides the advantages outlined above, the care, foresight, and experience of the established surgeon, at present almost limited to the treatment of "list" cases, would be available for the urgent cases which constitute 40–50% of surgical admissions to general hospitals.

Advantage, too, should be taken of our resources of adequately trained surgeons (100–150 fifth-year surgical senior registrars [1]) to staff these units. Increased opportunity would be available for further research into acute surgical disease, which is still responsible for the premature loss of thousands of lives annually.

Withington Hospital,
Manchester. N. F. KIRKMAN.

SOMATOTROPHIC HORMONE AND THE PANCREAS

SIR,—Recent reports have emphasised the possibility that the islets of the pancreas may play a part in the processes of growth. It has been suggested that the peripheral effects on growth of the pituitary somatotrophic hormone (S.T.H.) may be brought about, partly or wholly, by the liberaton from the islets of insulin and/or glucagon, produced respectively by the B and A cells.[2–5] In this connection, we have been carrying out some morphological studies on the islets of animals under S.T.H. treatment.

In the first experiment, two groups of intact rats, weighing 105 ± 2 g. were treated for two to ten days with corticotrophin (A.C.T.H. Armour) or S.T.H. (Armour), the daily dose varying from 1 to 10 mg.; nine hours before sacrificing they were given colchicine (40 μg. per 100 g. body-weight). Histological examination of the pancreas stained by Gomori's chromohæmatoxylin-phloxyn method showed a large number of atypical mitoses in the islets in both groups; but in the S.T.H.-treated group the absolute number of mitoses and the proportion of dividing A cells was much higher than in the A.C.T.H.-treated group.

In another experiment, a strain of mice with hereditary pituitary dwarfism, due to recessive anterior pituitary hypoplasia, was used. It was observed that the islets of dwarfs, in comparison with those of normal animals of the same strain, were very rich in A cells and consisted of hypotrophic

1. Walton, J. N., Forrester, R. M. *Brit. med. J.* 1953, i, suppl. 156.
2. Bornstein, J., Reid, E., Young, F. G. *Nature, Lond.* 1951, **168**, 903.
3. Best, C. H. *Diabetes*, 1952, **1**, 267.
4. Elrick, H. *Proc. Soc. exp. Biol., N.Y.* 1953, **82**, 76.
5. Young, F. G. *Abstr. int. Congr. Physiol. Montreal*, 1953, p. 18.

A and B cells. After giving S.T.H. for several weeks, the islets of the dwarf animals increased in number and size and the A and B cells became hypertrophic, whereas the A/B cell ratio was hardly changed at all.

Our observations suggest that there is a close relationship between S.T.H. and the pancreatic islets. On morphological grounds it seems very probable that this pituitary hormone could stimulate both types of cell in the islets, producing insulin and glucagon. But further work is needed to decide whether S.T.H. acts on the islets directly or indirectly and how far the peripheral effects of this hormone can be attributed to stimulation of the islet cells.

Institute of Pathological Anatomy, University of Milan. CESARE CAVALLERO.

BACT. COLI IN THE CAUSATION OF INFANTILE DIARRHŒA

SIR,—In recent years many reports [1-6] have appeared about the rôle of *Bacterium coli* type O, 111 : B, 4 and type O, 55 : B, 5 in infantile diarrhœa, and there is already much evidence to incriminate these organisms.

In a previous letter,[7] we described the examination of *Bact. coli* O, 111 : B, 4 and O, 55 : B, 5 in the stools of healthy infants and of those suffering from non-epidemic infantile diarrhœa. We have also investigated two outbreaks of infantile diarrhœa, associated with *Bact. coli* O, 55 : B, 5, in a home for infants—that is, in an enclosed environment (apart from new admissions)—here in Nagoya.

Fæces from each child at the home were examined weekly, from June 25, 1952, to March 1, 1953, and more frequently when cases of diarrhœa occurred. *Bact. coli* types O, 111 : B, 4 and O, 55 : B, 5 were looked for routinely and, from October, 1952, O, 26 : B, 6 as well.

In July and November, diarrhœa, associated with *Bact. coli* O, 55 : B, 5, was present in two outbreaks. In the first outbreak, 10 out of 20 children were involved. This strain was isolated from 7 of them. The onset was comparatively mild and signs were very slight. In the second outbreak, out of 18 children, 15 were ill and the strain was isolated from 13 of them. This outbreak began very suddenly; there was 1 death, and 3 cases were severe, 6 moderate, and 5 mild. Thus, in the two outbreaks, there were 25 cases, of which 20 yielded this strain of *Bact. coli*; no other pathogenic organisms were isolated.

During the period of the outbreaks 5 infants were discharged and 3 were admitted; so that out of the 18 exposed to the second infection, 15 had been exposed to the first. If a large number of susceptible infants had entered the home after the end of the first outbreak, this might have accounted for the increased severity of the second attack; but in fact only 3 were admitted, and some of those who were severely ill in the second outbreak had been exposed to the first.

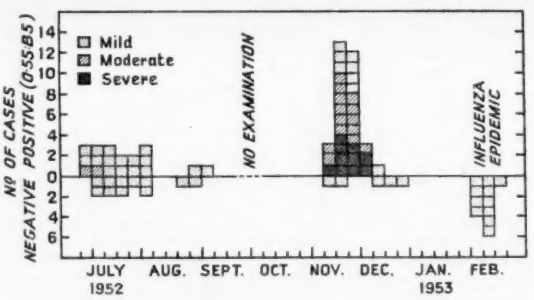
The organism was isolated between one and six days before the clinical onset in 6 of the bacteriologically proven cases. After clinical signs had subsided and treatment had been stopped, this organism reappeared in 10 out of the 20 cases, but the strain usually disappeared in about a month.

In the child who died in the second outbreak, the onset was mild, but on the fifth day there was a sudden rise in temperature, accompanied by meteorism, restlessness, and cyanosis, and finally by convulsions and death within fourteen hours. In this case there were many *Bact. coli* O, 55 : B, 5 in the large intestine and terminal ileum. None were isolated from the other organs. The intestine was moderately inflamed, but the most serious change was fatty degeneration of the liver.

In agglutination tests in the other cases there was usually a temporary rise between the second and sixth weeks.

Bacteriological investigations of the stomach contents (6 cases), pharyngeal swabs (6), vomit (4), and blood (1) were all negative.

1. Braun, O. H., Aust, B. *Mschr. Kinderheilk.* 1953, **101**, 75.
2. Kirby, A. C., Hall, E. G., Coackley, W. *Lancet*, 1950, ii, 201.
3. Krepler, P., Zischka, W. *Z. Kinderheilk.* 1953, **72**, 625.
4. Rogers, K. B. *J. Hyg., Camb.* 1951, **49**, 140.
5. Wright, J., Villanueva, R. *Ibid*, 1953, **51**, 39.
6. See leading article, *Lancet*, 1952, ii, 323.
7. *Ibid*, 1953, i, 602.



Two outbreaks of infantile diarrhœa in a home for infants in Nagoya.

During the second outbreak 4 adults (2 doctors, a nurse, and a laundress) were found positive for *Bact. coli* O, 55 : B, 5 : 2 of them had nausea, abdominal pain, and some diarrhœa.

In the infants' home, two months after the second outbreak, there was an influenza epidemic. On this occasion, there were 8 children with diarrhœa. Bacteriological examinations were made regularly, but the stools were all negative.

Chloramphenicol was given in 7 cases, aureomycin in 3, and streptomycin in 2. We found that all three drugs were effective, but in the 2 cases given streptomycin, there were slight relapses on the sixth and fifteenth days of the illness.

In November, 1952, we tried to obtain these strains in another infants' home in which 60 infants lived. Cultural examinations were performed once a week for a month in all the children, but there were no positive results.

From these results, it seems clear that these outbreaks of infantile diarrhœa were closely connected with *Bact. coli* O, 55 : B, 5. The following facts are interesting :

(1) There were 4 children who had diarrhœa with *Bact. coli* O, 55 : B, 5 in the first outbreak and who also carried this strain in the second.

(2) In the two outbreaks, the severity of the clinical signs and the epidemiological features were different.

TOHRU OGAWA
Professor of microbiology
JIRO OGAWA
Professor of pædiatrics.
Nagoya City University, Japan.

INTUSSUSCEPTION IN AN ADULT

SIR,—Teasdale has lately reviewed [1] the literature concerning colo-colic intussusception in adults, pointing out that this condition is not as rare as such a review might suggest. In 1911 Eliot and Corscaden [2] collected 300 cases, of which only 20 were due to carcinoma; but in Teasdale's series of 242 cases of carcinoma of the colon, seen during the past twelve months, 11 presented with intussusception.

I should like to describe a further case.

A woman, aged 71, was admitted to hospital as a case of intestinal obstruction on Dec. 24, 1950. She had had hæmatemesis 12 years ago, and a partial gastrectomy for duodenal ulcer 6 years ago. She had been well until 2 days prior to admission. For the past 48 hours she had had severe generalised colicky abdominal pain which had kept her awake at night, with one small vomit on the first day of the attack. Her bowels had opened regularly until the day of admission. There had been no blood or mucus in the stools.

She was a pale and wasted old lady. Her tongue was coated and furred. There was no distension or tenderness in the abdomen, but a hard sausage-shaped mass was felt in the left hypochondrium.

At laparotomy on the night of admission, using a right lower paramedian incision, a loose colo-colic intussusception was readily reduced from the left hypochondrium. There was no interference with blood-supply. The cause was a large fungating carcinoma of the cæcum, about 2 in. in diameter. There were enlarged glands in the mesocolon and mesentery, but no evidence of distant spread. Her general condition seemed satisfactory and there was little evidence

1. Teasdale, D. H. *Brit. J. Surg.* 1953, **41**, 128.
2. Eliot, E., Corscaden, J. A. *Ann. Surg.* 1911, **53**, 169.

of dilatation in the small gut, so a right hemicolectomy and end-to-end anastomosis were performed. The wound was closed without drainage.

Section of the tumour showed a "tubular, columnar-celled carcinoma of the cæcum. Sinus catarrh, œdema, and congestion, but no evidence of secondary carcinoma in lymphatic gland from mesocolon."

The patient made a surprisingly good recovery and the postoperative convalescence was uneventful. She was discharged as an inpatient on Jan. 11, 1951.

Hackney Hospital,
London, E.9. R. F. READ.

SUBCLINICAL POLIOMYELITIS INFECTIONS

SIR,—Your leading article of Nov. 14 has already been criticised by Dr. Bradley (Nov. 28) for its misuse of Melnick and Ledinko's [1] interesting study of the development of antibodies in the sera of children during an epidemic in 1948 in Winston-Salem, North Carolina. There are, however, a few points to be added, and two misconceptions appearing in your article should be corrected.

First, it is worth looking at the figures more carefully. The epidemic showed an incidence of 62 cases per 100,000 population (highest national figure for this country 20 per 100,000); the ratio of paralytic to non-paralytic cases was high (2 : 1), and the *calculated* incidence of actual cases per subclinical infection varied from 6 to 16 per 1000 according to the age-group of the children studied (before 1947 the incidence was probably somewhere about 1 per 1000 in this country). By the end of this severe epidemic the percentage of children studied who were immune to each of the three types of virus were :

(*a*) In the upper economic groups :

Type I	Type II	Type III
23 (19)	30 (19)	23 (23)

(*b*) In the lower economic groups :

Type I	Type II	Type III
66 (38)	58 (43)	45 (45)

(The numbers in parentheses show the percentage figures before the epidemic.)

Unlike you, Sir, I find these figures intensely depressing. Winston-Salem had not only had a severe epidemic in 1948, it had also had an epidemic in 1944; and all three types of virus had been represented in one or other epidemic. Yet, even excluding new entrants by birth, over half the child population was still susceptible to one or more types of the virus. At this rate, severe epidemics can go on almost indefinitely—as in fact they have done for the last 50 years in the United States of America.

This brings me to the correction of the first of your two false assumptions. You assume that evidence of subclinical immunisation by poliomyelitis *viruses* is incompatible with evidence that poliomyelitis *disease* runs along "narrow streams of the population" and that one must therefore choose one set of evidence and reject the other. You choose to reject the "narrow streams."

But both sets of evidence are incontrovertible, and no conception of the epidemiology of poliomyelitis which does not accommodate both is admissible. Fortunately they are easily reconciled if one recognises the possibility that different strains of the three viruses may differ—like many other pathogenic organisms—in their virulence. Thus the "narrow streams of *disease*" are caused by the virulent strains carrying a high rate of clinical disease and the wider subclinical infection by milder strains carrying a much lower rate. An analogy with *gravis* and *mitis* strains in diphtheria is obvious; both these strains produce a common immunity, but they vary markedly in the amount and severity of disease which they cause in the process. Since variations of virulence of strains of poliomyelitis virus are a common laboratory experience, there is nothing revolutionary in suggesting that the same phenomenon is at work during epidemics of poliomyelitis.

The severity of any particular epidemic will therefore depend on :

(1) the proportion of virulent and non-virulent strains spreading through the population; and

(2) the population's "immunological state" (in other words its previous experience of strains of the prevalent types of poliomyelitis virus). To quote two examples : in an epidemic among Eskimos in Chesterfield Inlet [2 3] the incidence was as high as 1 in 5 (5%, of the *total population* died and 14% became paralysed), while incidences as low as less than 1 in 1000 have been reported for other population groups.[4–6]

The Eskimos of Chesterfield Inlet were presumably exposed to unusually virulent strains of a type of virus to which they had not previously been exposed (adults were as susceptible as children). Something similar to the Eskimo experience, but fortunately not as severe, was seen among British Servicemen in Malta in the winter of 1942–43.[7] Their susceptibility to an epidemic affecting the Maltese children (82% were under 5 years old) contrasted strongly with the immunity of the Maltese adults, who although there was no history of previous *epidemics* in the island, were virtually immune. Clearly the virulence of strains of a type familiar to the Maltese but not to the British had increased, *and with it the ratio of clinical to subclinical infection*. This exposes your second false assumption—that there is a universal constant ratio for clinical and subclinical infections, which led you to apply the findings in Winston-Salem arbitrarily to this country. The ratio varies not only from population to population but also for the same population from year to year.

In fact a conception of strains of different virulence within the three different immunogenic types of poliomyelitis viruses makes easy sense of a lot of apparently conflicting data, and yet, since it conforms with general epidemiological principles, does not strain the imagination. Its immediate practical application is, of course, to the control of the spread of the disease. A strain which has caused one clinical case is for that very reason to be regarded as a dangerous strain which, if allowed to spread, is likely to show a high incidence of clinical disease (cf. the epidemic in Rye last year). Its spread should therefore be prevented by every means we have. The mild strains responsible for the subclinical infection we neither could nor would prevent from spreading—in fact, if we could, we would help them as much as we would hinder the others, since it is important that they should infect, and so immunise, as many persons as possible before the more virulent strains can infect and not only immunise but also paralyse many of them. The present non-intervention policy, which you would appear to favour, results only too often in the race being won by the virulent strains. The result is a steady rise in notification figures all over the world.

In conclusion, two recent confirmations of the validity of the "narrow streams" of disease must be mentioned since your article questions this obvious fact.

1. In New York [8] the incidence of clinical cases among household contacts of cases was found to be 40 times higher than among controls. Further, 95% of the secondary cases occurred within two weeks of the initial case.

1. Melnick, J. L., Ledinko, N. *Amer. J. Hyg.* 1953, **58**, 207.

2. Adamson, J. D., Moody, J. P., Peart, A. F. W., Smillie, R. A., Wilt, J. C., Wood, W. J. *Canad. med. Ass. J.* 1949, **61**, 339.
3. Paul, J. R., Riorden, J. T., Melnick, J. L. *Amer. J. Hyg.* 1951, **54**, 275.
4. Turner, T. B., Young, L. E., Maxwell, E. S. *Ibid*, 1945, **42**, 119.
5. Turner, T. B., Hollander, D. H., Buckley, S., Kokko, U. Penttl, Winsor, C. P. *Ibid*, 1950, **52**, 323.
6. Casey, A. E., Fishbein, W. I., Schabel, F. M. jun., Smith, H. T. *Amer. J. publ. Hlth*, 1950, **40**, 1241.
7. Seddon, H. J., Agius, T., Bernstein, H. G. G., Tunbridge, R. E. *Quart. J. Med.* 1945, **14**, 1.
8. Siegel, M., Greenberg, M. *New Engl. J. Med.* 1953, **249**, 171

2. In the much misquoted epidemic in Denmark at least 28% of the cases studied were found to have a history of contact with another actual case—indirect contacts do not appear to have been studied.[9]

The matter is urgent and we cannot afford the luxury of prejudice and ill-informed "opinions." Compared with others this country has been fortunate in its experience of poliomyelitis, but we must not abuse our good fortune. The experiences of Denmark, Sweden, Canada, and the United States of America, to mention only a few countries, in recent years may well be ours next year unless we initiate deliberately *in advance* measures which will otherwise be forced upon us—but too late. For "if restrictive control measures in a population are to exert a significant influence they should be applied early in an outbreak to the adults and children who are familial and non-familial contacts of the frank case."[10] This was the conclusion of workers studying the distribution of virus and conforms with epidemiological experience not only of poliomyelitis but of many other epidemic diseases.

Wingfield-Morris Orthopædic Hospital, Oxford. MARGARET AGERHOLM.

CORTISONE AND RHEUMATOID ARTHRITIS

SIR,—I should like to give support to the letter by Dr. Renshaw (Nov. 28) on this subject, for I have found an extract of intestinal mucosa most beneficial in a variety of rheumatic cases seen in general practice over the past six or seven years.

Looking over some fifty or sixty cases, including rheumatoid arthritis, osteo-arthritis, spondylitis deformans, gout, and fibrositis, one is impressed by the fact that in only one case was no improvement registered. Failure in this case was, I believe, due to the fact that the patient failed to continue the treatment as instructed; she has since had a variety of other treatments with no benefit.

The improvement in general health of these patients is most impressive and is followed gradually by diminished pain and increased mobility of the joints.

An extract of erepsin, when injected into the tender areas in cases of fibrositis, has a remarkable effect; after an initial stiffness, lasting twenty-four to thirty-six hours, all pain goes.

In practice the treatment is easy to give and control with a minimum of time and trouble, there being no necessity to see patients more frequently than once every four to six weeks.

I am quite certain that, if patients can be persuaded to carry out the treatment properly, they will slowly but steadily improve.

Sheringham, Norfolk. H. C. GELDARD.

SIR,—I have been in charge of a rheumatism clinic at Warrington Infirmary, in conjunction with the orthopædic clinic, for 27 years. Because of the large number of rheumatoid arthritis cases attending, which congested the other work of the physiotherapy department, I endeavoured to relieve the pressure on the department by giving other forms of treatment for this disease. These included gold, vaccines, deoxycortone and vitamin C, 'Irgapyrin,' and phenylbutazone (by injection and by mouth).

About eight years ago, after consultation with Dr. Arnold Renshaw and on his advice, I decided to give a trial to treatment of a series of cases by intestinal extract, with a balanced protein diet.

Given an intelligent and coöperative patient with the requisite amount of patience during the initial few months of this treatment, definite improvement has occurred and has been maintained in well over 100 cases, with less striking improvement in many others. Crippled housewives have been able to do their housework and previously disabled industrial workers have returned to modified work.

It is important to realise that some considerable time—varying with the individual patient—must elapse before improvement commences. In these patients sedatives have been discouraged as much as possible. In the few young patients I have treated, the results were very good. The general health in nearly every case was improved and weight increased in debilitated patients.

Grappenhall, near Warrington. BERNARD MURPHY.

MARROW BIOPSY

SIR,—It seems to me that a simple and efficient method of performing bone-marrow trephine biopsies is an essential requirement for a hæmatology department. The examination of bone-marrow smears, invaluable as it is, does seem, not too infrequently, to need the complementary histological examination of both bone-marrow and its adjacent bone. The reasons are well known and have been noted by Custer[1] and Block.[2] In particular, histological examination is necessary to obtain a reliable guide to the nature and extent of the non-cellular and non-hæmopoietic tissue structures[3] and to the presence of abnormalities such as foci of metastatic neoplasm or granulomata.[4–6] Furthermore, the relation of the hæmopoietic to the non-hæmopoietic tissues is probably better seen in sections, simple smears sometimes being misleading owing to either blood dilution[1,2] or greater resistance to suction removal of the more primitive hæmopoietic tissues[7] and sometimes the megakaryocytes.[8] This different resistance to suction removal is particularly important because it results in selected smears which are not representative of the true quantitative and qualitative structure of the marrow.[9,10] This defect may be especially troublesome when dealing with patients who are either taking drugs which depress hæmopoiesis or who have diseases such as erythræmia[11] or chronic myeloid leukæmia[12] in which the hæmopoietic tissues sometimes appear to differentiate into a non-hæmopoietic phase.

Of course, the examination of bone-marrow sections has its drawbacks, one being the difficulty sometimes encountered in identifying the various hæmopoietic cells and another the procedures involved in obtaining the specimen for histological examination. Such procedures vary from the simple ones of sectioning fragments of needle-aspirated marrow[13] or using needle-like trephines of about no. 17 B.W.G.[14,15] to the more complicated methods using ordinary 1 cm. diameter trephines[16] or excising $^1/_2$–1 in. segments of rib.[17] Unfortunately, most of the simpler methods are either inefficient or yield too small a specimen; the more complicated ones seem too drastic for day-to-day use in a hæmatology department.

9. See *Brit. med. J.* Oct. 31, 1953, p. 991.
10. Pearson, H. E., Rendtorff, R. C. *Amer. J. Hyg.* 1945, **41**, 164, 179. Pearson, H. E., Braun, G. C., Rendtorff, R. C., Ridemont, G. M., Frances, T. jun. *Ibid*, p. 188.

1. Custer, R. P. An Atlas of the Blood and Bone-marrow. Philadelphia and London, 1949.
2. Block, M. *Illinois med. J.* 1950, **98**, 202.
3. Block, M., Jacobson, L. O. *J. Amer. med. Ass.* 1950, **143**, 1390.
4. Görmsen, H. *Acta med. scand.* 1948, **131**, 154.
5. Weisberger, A., Heinle, R. *Amer. J. med. Sci.* 1949, **217**, 263.
6. Stahel, R. *Folia Hæmat., Lpz.* 1939, **61**, 345.
7. Block, M., Jacobson, L. O. *Acta hæmat.* 1948, **1**, 165.
8. Berman, L., Axelrod, A. R., Kumbe, B. S. *Amer. J. clin. Path.* 1948, **18**, 898.
9. Dameshek, W., Henstell, H. H., Valentine, E. H. *Ann. intern. Med.* 1934, **11**, 801.
10. Weisberger, A., Heinle, R. *Amer. J. med. Sci.* 1949, **217**, 177.
11. Marson, F. G., Meynell, M. J. *Brit. med. J.* 1952, **i**, 1113.
12. Black-Schaffer, B., Stoddard, L. D. *Amer. J. Path.* 1953, **29**, 413.
13. White, J. C., Baker, J. R., Griffin, J. G. *J. Path. Bact.* 1946, **58**, 155.
14. Turkel, H., Bethel, F. H. *J. Lab. clin. Med.* 1943, **28**, 1246.
15. Bernstock, L., Sterndale, H. *J. clin. Path.* 1951, **4**, 378.
16. Custer, R. P. *Amer. J. med. Sci.* 1933, **185**, 617.
17. Hutt, M. S. R., Smith, P., Clark, A. E., Pinniger, J. L. *J. clin. Path.* 1952, **5**, 246.

Dameshek [18] has described a less drastic plan, using a slightly modified Seyfarth's 5 mm. diameter trephine.[19] It seems, therefore, that this size of trephine has a valuable place in hæmatological investigations and it is of interest to note that there is readily available in this country a very suitable trephine for this type of biopsy. This instrument is the trephine for the Blackburn skull-traction appliance; it has a T-shaped handle, an adjustable guard allowing a maximum penetration depth of about 8 mm., and an adjustable central pin which aids in rapidly ejecting the excised bone fragment into the fixative. It cuts out a bone fragment of 4 mm. diameter.

With this instrument the biopsy is rapidly performed. Using full aseptic precautions and with the patient under general anæsthesia, the skin over the selected bone is incised for a distance of 2 cm.; the skin is retracted, the periosteum incised, and, if possible, the edges of the periosteum stripped up with a Watson-Cheyne dissector. With its central pin retracted and the guard set at the appropriate depth, the trephine is then rotated into the bone and gently rocked to break the deep trabeculæ and the bone fragment removed within the trephine cavity. An assistant transfers the bone fragment to the fixative. If the bone is unduly sclerotic and does not readily break away, the fragment may be forced out of the bone with a 4 mm. Jenkins gouge. The marrow adjacent to the trephined hole is scraped out with a meibomian-cyst scoop and reserved for smearing. If bleeding is troublesome, the bone cavity is filled with a freshly prepared solution of Maw's thrombin, and the periosteum replaced but not sutured; on occasions, it may be advantageous to pack the cavity with thrombin-soaked gelatin sponge. On no account should the cavity be packed with surgical gauze. Two sutures are placed in the skin and the wound covered with a dry dressing. Although I have not yet done so, both Custer [16] and Dameshek [18] perform their trephine biopsies under local anæsthesia.

I am much indebted to Mr. W. Parke, F.R.C.S., who first suggested to me the use of this trephine. The trephine may be obtained from the London Splint Co. Ltd., 69, Weymouth Street, London, W.1, and the 4 mm. Jenkins gouge and the large meibomian-cyst scoop may be obtained from Messrs. Allen & Hanburys Ltd., London.

London, S.W.3. A. B. HILL.

ALL IN THE DAY'S WORK

SIR,—The Widdicombe discussion (Nov. 14 and 28) on the performance of simple clinical pathology in general practice seems to me, as a hospital pathologist, to be eminently sensible. I do agree that a simple method of hæmoglobin estimation would be best, especially if one observer were to use such a method constantly. One minor criticism refers to the method of syringe sterilisation. Baking is obviously far better than boiling for syringes, as for most joints of meat, but to use an ordinary domestic oven several precautions must be taken. Few are provided with thermometers and these do not necessarily record the temperature of the part of the oven which might be used for sterilisation. Thermostatic controls are fitted to most of them, but once more they only control the temperature in one part of the oven. Experience has shown me that quite wide variations may take place elsewhere in the oven and it may have quite marked "hot spots" and "cold spots." It is to obviate these, of course, that special design of laboratory ovens is necessary. The same remarks apply to domestic refrigerators, as is well known to anybody who has tried to store blood in one. Note, in addition, that needles used in taking capillary blood must be kept in 'Lysol.'

One final comment is that although it is a bad pathologist who insists that his findings must be "right" it is also a bad clinician who insists they must be "wrong." The results of laboratory tests are facts which cannot be overlooked any more than such clinical signs as a cardiac murmur or a palpable spleen. In many cases there are anomalous findings, although an ideal picture of what is happening would account for them all. A laboratory result which does not fit the diagnosis has not necessarily been produced by faulty technique. We may not know what it means and it may not help us immediately, but it may well be a clue to further discoveries.

Department of Pathology, Royal Liverpool Children's Hospital. R. E. REWELL.

18. Dameshek, W. *Amer. J. med. Sci.* 1935, **190**, 617.
19. Seyfarth, C. *Dtsch. med. Wschr.* 1923, **49**, 180.

Parliament

Air Pollution

IN the House of Commons on Dec. 2 Mr. MACMILLAN, Minister of Housing and Local Government, said that the Government had considered the interim report of the Committee on Air Pollution.[1] On Nov. 17, before the report was submitted, doctors were authorised to prescribe masks under the National Health Service for patients suffering from heart or lung disease living or working in an area where smoke-polluted fog is likely to occur. Following the committee's recommendations, the Government had already arranged for the Meteorological Office to issue warnings when serious fog was expected to prevail for at least 24 hours in areas of normally high pollution. These fog-warnings would be accompanied by advice to the public about the ways in which they could help to reduce smog and its ill effects. The Government were studying further steps which might be taken to ensure application of these measures and make them more effective, while awaiting the next report of the Beaver Committee.

QUESTION TIME

Use of Agene in Flour

Replying in the House of Lords to Lord HANKEY, Viscount WOOLTON, Chancellor of the Duchy of Lancaster, said that although good progress had been made, the investigators into the use of agene in flour for human or animal consumption were not yet complete. It was hoped, however, that it would be possible to make a statement on the subject within the next three months or so.

B.C.G. Inoculation of School-leavers

Mr. S. P. VIANT asked the Minister of Health whether any means had been devised to follow the medical history of school-leavers who underwent B.C.G. inoculation; and how should such persons subsequently develop tuberculosis, can the fact that they had been inoculated be ascertained in the case of those who left the area in which the inoculations were performed.—Mr. IAIN MACLEOD replied: Local health authorities have already been advised to keep records of the vaccination of older school-children together with information of their follow-up. These records should enable the date of a particular inoculation to be ascertained later by communication between the authorities concerned.

Tuberculosis Notifications

In answer to a question Mr. MACLEOD stated that the tuberculosis notifications for England and Wales for 1952 numbered 48,093 (respiratory 41,994; other forms 6189). He regretted that these figures had been inadvertently omitted from table 37 of the *Annual Abstract of Statistics*.

Medical Grading of National Service Recruits

Replying to a question Mr. HAROLD WATKINSON, parliamentary secretary to the Ministry of Labour and National Service, stated that since 1948 the numbers of men called up for National Service and the numbers rejected on medical grounds were as follows:

Year	*Called up*	*Rejected on medical grounds*
1948	150,900	27,750
1949	166,600	36,370
1950	174,200	47,314
1951	168,651	43,856
1952	170,384	42,829

Sexual Offences

Replying to a question, Sir DAVID MAXWELL FYFE, the Home Secretary, said that in 1938 the number of unnatural offences known to the police in England and Wales was 134; the number of attempts to commit unnatural offences (including indecent assaults on male persons and cases of importuning

1. The report is summarised on p. 1257.

for immoral purposes dealt with on indictment) was 822; and the number of offences of gross indecency was 320. The corresponding figures for 1952 were 670, 3087, and 1686.

Sir ROBERT BOOTHBY: Is the Home Secretary satisfied that the law relating to sexual offences is really effective and workable? Is he satisfied with the present institutional treatment of sexual offenders, and does he not think that further research into the problem, perhaps beyond purely departmental research, is urgently required? Sir DAVID MAXWELL FYFE: One element in dealing with this matter is the protective element in punishment, because homosexuals in general are exhibitionists and proselytisers, and are a danger to others, especially the young, and so long as I am Home Secretary I shall give no countenance to the view that they should not be prevented from being such a danger. As regards treatment, I should like to assure the House that we are very much alive to the problem in our prisons today. Arrangements are made for medical attention, especially of a psychiatric kind. But the difficulty in these cases is that for treatment to be successful there must be coöperation, and in many cases coöperation is refused.

The third point that must always be borne in mind is that apart from the true invert, there are homosexuals who use that instead of ordinary sexual intercourse, the male prostitutes who come up on these importuning cases, and the sensationalists who would try any form of excitement and indulgence. These three types of cases, apart from the male invert, can be dealt with, and are being dealt with, by our prison system. I am trying to study and give my careful attention to the whole problem, but it would be wrong not to stress these points.

Mrs. BRADDOCK: Will the Home Secretary consider carefully the medical aspect, because many magistrates who understand the situation are reluctant to give terms of imprisonment in these cases because of overcrowding in prisons where men are put two or three in a cell? It is considered that sending them to prison accentuates the trouble rather than cures it. Sir DAVID MAXWELL FYFE: Unfortunately, owing to the shortage of space, there are about 5000 people who are three in a cell. This matter has been carefully examined, and I believe that the chances of increasing homosexual inclinations from that cause have been greatly exaggerated. Although, of course, homosexuality exists in prisons—as Sir Alexander Paterson said, you cannot help it in a "monastery of men unwilling to be monks"—I think the effect has been exaggerated. We have not been able to find any evidence of much increase of inclination.

Examination of Mentally Deficient Children

Mr. A. J. IRVINE asked the Home Secretary whether, in cases where a child was examined under the procedure referred to in section 9 of the Mental Deficiency Act, 1913, it was the practice of his department to permit, if the child's parents desired it and at their own expense, an examination of the child by an independent medical expert of the parent's choice and to give consideration to the report following such examination.—Sir DAVID MAXWELL FYFE replied: Section 9 of the Mental Deficiency Act, 1913, empowers me to order the transfer to a suitable institution, or the placing under guardianship, of a child detained in an approved school or, in certain circumstances, in a remand home, if I am satisfied from the certificates of two qualified medical practitioners that the child is a defective. Such certificates are considered most carefully, in the light of the medical advice available to the Home Office, before any action is taken on them. I am prepared to give favourable consideration to requests by parents for an examination by a doctor of their own choice where there is reason to think that the further opinion would be of value; in the few cases where such requests have been made hitherto it has not been considered that a further examination would serve any useful purpose.

Medical and Dental Recruitment

Mr. PERCY MORRIS asked the Minister of Health how far he was satisfied with the rate of recruitment to the medical and dental professions; and how far he anticipated that the needs of local-government social services would be adequately met from such sources during the next three years.—Miss F. HORNSBY-SMITH replied: Recruitment in the medical and dental profession is through entry into university medical and dental schools—which are outside the Minister of Health's control. He has no grounds for thinking that the number of doctors qualifying will be insufficient to provide for recruitment to local government or other services but fears that the shortage of dentists will not be overcome in the period mentioned.

Fluoridation of Water-supplies

Replying to a question Mr. MACLEOD said that the Government had decided to accept the recommendations of the report of the United Kingdom Mission which studied the fluoridation of domestic water-supplies in North America as a means of controlling dental caries. In conjunction with the Minister of Housing and Local Government, who was responsible for public water-supplies in England and Wales, the Secretary of State for Scotland and he proposed to arrange for studies to be made in some selected communities of the various aspects of the fluoridation of water-supplies before considering whether fluoridation should be generally adopted in this country. An approach would be made to certain local authorities to invite their coöperation in making these studies.

Woodberry Down Health Centre

Colonel MALCOLM STODDART-SCOTT asked the Minister what information he had about the extent to which the Woodberry Down Health Centre, Stoke Newington, was being used; and what accommodation at the clinic was still unused. Miss HORNSBY-SMITH replied: The whole of the centre is in use except two dental laboratories, one dental surgery, a medical store, a clinical side-room, and the doctor's night-duty accommodation.

Obituary

THOMAS YULE FINLAY
M.D. Edin., F.R.C.P.E.

Dr. T. Y. Finlay died on Nov. 28, in Edinburgh where he had spent his whole professional life and where he was the first maternity and child-welfare medical officer.

Born in Paris in 1882 of Scottish parents, his early days were spent there, but when his family returned to Edinburgh he became a pupil at the Royal High School and then proceeded to the university where he graduated M.B. in 1907, obtaining the M.D. with high commendation in 1912. His brother-in-law, Dr. Gaston Variot, of Paris, was a pioneer in the infant-welfare movement, and Finlay early in his career showed a keen interest in child care. This interest was also encouraged by his intimate association during his hospital residencies with the late J. W. Ballantyne and John Thomson. Finlay always acknowledged the great debt he owed to these two distinguished men.

In 1913, when he was medical superintendent of one of the large poorhouses in Edinburgh, he introduced new methods of treatment, supervision, and record-keeping of the children resident there which attracted the favourable attention of the Local Government Board for Scotland. In 1919 he was the natural choice of Edinburgh Corporation as medical officer in charge of the newly formed maternity and child-welfare section of the public-health department. He was blessed with the gift of bringing happily together voluntary and official agencies for the care of mothers and young children, and the section of which he was head expanded its functions steadily and achieved fruitful results.

In 1922 he took the M.R.C.P.E., and the same year he became an assistant physician at the Royal Hospital for Sick Children. He was also appointed senior assistant physician to the reorganised children's unit of the municipal hospitals' service. He was a lecturer and examiner on diseases of children and child hygiene at the university and at many other teaching bodies in the city, and he was early in the field in the training of health visitors. He became F.R.C.P.E. in 1927. He was a member of many medical and pædiatric societies. An honour which he greatly valued was that of honorary membership of the British Pædiatric Society, of which he was an original member. When he retired under the age-limit in 1947, his faithful services to the city were publicly acknowledged. In his retirement he flung himself wholeheartedly into the work of several of the voluntary organisations with which he had been closely associated during his official career.

He is survived by his wife, daughter, and two sons.

Notes and News

LIBRARY OF THE ROYAL COLLEGE OF PHYSICIANS

THE first published catalogue of the library of the Royal College of Physicians of London, which appeared in 1660, contained 1278 titles. Today the college has 40,000 printed books, 600 manuscripts, a small collection of letters, and the H. M. Barlow collection of bookplates from medical institutions. The Harveian Librarian has lately issued a short introductory note which sets out some of the library's story.

The original collection was based on the library of Thomas Linacre, who founded the college in 1518. William Harvey was another benefactor, who gave not only books but a museum in which to house them. A great deal was lost in the Great Fire of 1666, but the bequest of the Marquis of Dorchester's library in 1688 did much to offset this catastrophe. The most notable gift of recent years has been Dr. Lloyd Roberts's library, received in 1921—an addition of considerable value to medical historians. The library is now very well provided with biographies and has over 5000 engraved portraits and photographs of medical men. But its shelves have never been restricted solely to medical works: its treasures include the Wilton Psalter (c. 1250), Caxton's *Recuyell* (c. 1475), and the only known copy of the first book on dancing (Paris, c. 1488).

MEDICAL WAR RELIEF FUND

THE committee of this fund, at a meeting in London on Nov. 17, approved a report prepared by the distribution subcommittee on the year 1952–53. The report showed that 41 awards amounting to £2000 had been made. The largest gift (£500) was to the Australian War Relief Fund, which was in need of help to deal with urgent cases. As in previous years, educational grants were in the majority, and 15 widows were helped with the payment of school or university fees or the purchase of school outfits. At Aug. 31 the balance remaining in the fund was just over £13,000.

THE ST. JOHN AMBULANCE AIRBORNE

THE St. John Ambulance Brigade can now provide attendants for patients travelling by British European Airways, and it is hoped to extend this service to other air lines in due course. The members of the service have passed air-worthiness tests and are qualified in air duties and emergency midwifery, as well as in first-aid and nursing. The service is voluntary, but patients will be expected to pay the attendant's fare and reasonable out-of-pocket expenses. Further particulars may be had from brigade headquarters, 8, Grosvenor Crescent, London, S.W.1.

LINEAR ACCELERATOR AT ST. BARTHOLOMEW'S HOSPITAL

St. Bartholomew's Hospital, London, is to have a linear accelerator producing X rays by bombardment of platinum foil with electrons of a potential of 15 million volts. This will be the largest apparatus of its sort in existence for medical purposes. A similar machine is being built for Harwell for physical research. At the hospital the apparatus will be used for the treatment of cancer, the development of new methods of treatment, and fundamental research on the effects of high energy on the human body. The cost is being met by the governors from their endowed funds, and King Edward's Hospital Fund for London have promised a contribution.

STRESS AND ATHEROSCLEROSIS

To test a clinical impression, the frequency of atherosclerosis and some other degenerative conditions, as the cause of death, was compared in two Jewish groups in Denmark.[1] The one group, long established in the country and affluent, but dwindling in numbers, was believed to have led a more sheltered life and consumed a diet richer in cholesterol than the second group, composed of immigrants from Russia who had had a hard struggle to establish themselves. So far as stress was concerned, it could not be maintained that the men of the two groups differed greatly, though their different economic status exposed them to superficially different physical and emotional demands. Between the women of the two groups, however, there were conspicuous differences in respect of such presumptive stresses as marriage, childbirth, and domestic work. Corresponding differences were not found in the total proportion of deaths from atherosclerosis, but the age of death from this cause was earlier in the immigrant group of women. The authors do not carry out any statistical analysis beyond the calculation of percentages, and it is difficult to draw any firm conclusions from their findings. The two populations studied were small, and there were many possible sources of error; nevertheless the report is an interesting essay in social medicine.

1. Physical and Mental Stress and Consequential Development of Atherosclerosis within the Jewish Population of Denmark. By GRETHE HARTMANN and FINI SCHULSINGER. Copenhagen: Rosenkilde & Bagger. 1952. Pp. 78. Dan. Kr. 8.00.

W.V.S. HOSTELS FOR MOTHERS AND CHILDREN

THE hostel which was opened by the Women's Voluntary Services in 1945 at Clapham, to help mothers and babies suffering hardship as a result of the war, has now been moved to Streatham. It is intended to help women who have no home of their own and who have nowhere to go before or after discharge from hospital. A resident matron and two assistants teach the mothers to look after their babies, and give instruction on the principles of feeding and babies' laundering, and so forth.

The W.V.S. also run a short-stay home at Whitstable where children can go whose mothers have been taken into hospital or who might break down if they did not have a rest away from home. At Aldeburgh they run a recuperative home where children may stay for a month convalescing from chest diseases. Further particulars may be had from the W.V.S., 41, Tothill Street, London, S.W.1.

NEW FILMSTRIPS

FOUR filmstrips recently produced for the World Health Organisation set out to inform the public of some of its activities.[1] *Penicillin*, which is perhaps the best of them, deals mainly with the way in which it is being used to combat endemic syphilis, bejel, yaws, and pinta. *The Fight against Tuberculosis* shows some of the ætiological factors and gives an account of the work carried out at the Tuberculosis Centre, Istanbul. *Malaria* uses an anti-malaria campaign in Thailand as an illustration of what preventive measures can do. *For Babies Born too Soon* shows developments in the care of premature infants. In the first three the over-all picture is fairly well balanced, but this last one seems to emphasise unduly the work of a single clinic in Paris. A fifth filmstrip[2] has been prepared to teach teen-agers and young wives the methods and value of breast-feeding. The value of all these filmstrips will depend largely on the ability of the lecturer who uses them. None of them make any serious attempt to exploit the visual medium, and few of the pictures are more than a background illustration.

University of Cambridge

On Nov. 28 the degree of M.D. was conferred on M. G. Thorne and J. K. Wagstaff.

University of London

The degrees of M.B., B.S., have been awarded to D. D. J. Rees.

University of Manchester

The following have passed the final examination for the degrees of M.B., CH.B.:

Sheila Berry, J. K. Bleasdale, Cyril Booth, Margaret A. Broughton, J. W. Chamberlain, G. H. H. Dwyer, Pauline R. Dyckhoff, Gerald Gold, Lawrence Goldie, Aubrey Greenbaum, Mabel L. Haigh, Daphne J. Hall, Fred Heyworth, John Johnson, J. B. Jones, L. K. Levens, J. S. Lord, F. G. Lucas, Jean McCracken, Clifford Mawdsley, V. B. Maxwell, F. W. Murphy, W. C. Newport, Jeffrey Parkin, Lawrence Reece, Eve M. Roper, J. G. B. Russell, Ruth M. Sellars, Joan E. Singleton, J. N. Standring, A. O. F. Stuart, A. T. Thompson, S. T. Whitehead.

University of Dublin

On Dec. 3, at the School of Physic, Trinity College, the following degrees were conferred:

M.D.—E. W. Lillie.

M.B., B.Ch., B.A.O.—Stanley Allen, I. C. Bailey, Anne Bewley, A. W. Browne, William Brownlees, Barbara M. Cooke, William Dobson, Frank Fine, Dorothy A. Foster, J. B. Gill, Henry Hardman, N. L. Harris, C. A. Isola, Ariwodo Kalunta, J. E. Latham, G. R. L. Lyons, Donald McCaughan, S. W. McVicker, J. R. Noble, James O'Carroll, W. G. Speer, J. D. Tate, E. C. Tees, E. G. Weyhausen.

L.Med.—L. A. H. Oulton.

1. Penicillin: A weapon against disease. Cat. no. U.58. 45 frames. The Fight against Tuberculosis. Cat. no. U.56. 50 frames. Malaria. Cat. no. U.57. 51 frames. For Babies Born too Soon. Cat. no. U.54. 49 frames. All monochrome. 1952. Produced for the World Health Organisation, and available from Unicorn Head Visual Aids Ltd., Broadway Chambers, 40, Broadway, Westminster, London, S.W.1.
2. The Nursing Couple. Cat. no. U.55. Colour. 20 frames. 1952. Produced by the Central Council for Health Education, and available from Unicorn Head Visual Aids Ltd.

Royal College of Physicians of London

Dr. J. T. Ingram will deliver the Watson Smith lecture on Monday, Jan. 11, at 5 P.M., at the college, Pall Mall East, S.W.1, on the Significance and Management of Psoriasis.

Royal College of Surgeons of England

On Monday, Dec. 14, at 5 P.M., at the college, Lincoln's Inn Fields, London, W.C.2, Prof. Geoffrey Hadfield will deliver the Kettle lecture. He will speak on the Dormant Cancer Cell.

Industrial Injuries Advisory Council

Prof. R. E. Lane, F.R.C.P., has been reappointed to this council, and Mr. A. Miller, F.R.C.S.E., and Dr. L. G. Norman have been appointed.

Collecting Tissue Grafts

The French Académie de Médecine (*Times*, Dec. 4) is seeking to introduce legislation to permit surgeons to take tissue grafts from the bodies of young people killed in road accidents.

Chartered Society of "Queen Square"

The council of this society will shortly hold an election to fill vacant pensions (£20 per annum) which are available for people with incurable nervous diseases. Forms of application and further particulars may be had from the secretary of the society, National Hospital, Queen Square, London, W.C.1.

Heberden Society's Dinner

Speaking at the Royal College of Surgeons on Dec. 4, Sir David Maxwell Fyfe said that as Home Secretary he was interested to find that Heberden had been one of the first debunkers of the "super-poisoner." For thousands of years people had feared the master poisoner, who made the flower kill through its perfume or the ring through its touch; but Heberden had let in the cold air of science, describing these stories as the idle results of ignorance and superstition. Heberden had also been well versed in the classics—before the days when the Greek dramatists had become no more than a quarry for Viennese psychologists seeking names for their complexes. This year the Heberden oration had been given by Sir Russell Brain, and the Heberden round had been conducted in Lancashire by Dr. J. H. Kellgren, who had since been appointed professor at Manchester. Paying tribute to Heberden as a physician of the past, Sir David also paid tribute to a physician of the present—one, he said, who does not stand austerely on a pinnacle of fame but gives his friendship to an infinite variety of people who don't deserve it, and thereby enriches their lives. Lord Horder, in reply, somewhat reluctantly forgave the Home Secretary for these personal remarks: after all, Sir David might not have a chance of making them again—he might not be asked again. Welcoming Prof. R. E. Tunbridge as his successor in the presidency, he said that the society had had a successful year. With a membership limited to 100, it had a waiting-list of men and women well versed in what he must now regretfully call rheumatology. Comparing the position of the subject now with its position twenty years ago, it was evident that Cinderella had now been found by the Prince and taken to the dance. The three major advances of the last two decades came from recognising (1) that chronic rheumatism was a hotchpotch which needed separation both technically and administratively; (2) that it was not a local or a focal disease but an expression of the patient's fitness or otherwise; and (3) that the nervous system, in its relation to the vertebral column, played an important part in many cases of rheumatism. This had been well illustrated in the Heberden oration on Spondylitis delivered by Sir Russell Brain, to whom Lord Horder proceeded to present the Heberden medal. Dr. W. S. C. Copeman proposed The Guests in varying blends of respect and disrespect, and drew an equally light-hearted response from Miss Patricia Hornsby-Smith, parliamentary secretary to the Ministry of Health.

CORRIGENDUM: *The Anæsthetist's Responsibility.*—In the third paragraph of this leading article (Nov. 21, p. 1080) the third sentence should read: "Perhaps the most helpful measure is the administration by inhalation of a broncho-dilator such as isoprenaline, and postural drainage with vibratory and clapping percussion of the chest." In the fifth paragraph the last word in the sixth line should be "synchronous."

Mr. Patrick Clarkson is to be the guest speaker at the annual meeting in January in Chicago and Cleveland of the American Society for Hand Surgery.

Diary of the Week

DEC. 13 TO 19

Monday, 14th

ROYAL COLLEGE OF SURGEONS, Lincoln's Inn Fields, W.C.2
5 P.M. Prof. Geoffrey Hadfield: The Dormant Cancer Cell. (Kettle lecture.)

POSTGRADUATE MEDICAL SCHOOL OF LONDON, Ducane Road, W.12
4 P.M. Dr. Brian Ackner: Emotional Factors in Treatment Response.

UNIVERSITY COLLEGE, Gower Street, W.C.1
4.45 P.M. Mr. H. Gutfreund, PH.D.: Molecular Forces in Protein Solutions. (Last of two lectures.)

ROYAL EYE HOSPITAL, St. George's Circus, S.E.1
5.15 P.M. Dr. T. H. Whittington: Accommodation Clinically Considered; Cycloplegics; Retinoscopy.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, W.1
8.30 P.M. Mr. John Bunyan, L.D.S.: Application of the Microscope to Medicine. Dr. George Lumb: Pathology and Spread of Cancer of Breast. Dr. W. H. McMenemey: Degenerative Changes in Brain Following Stoppage of Heart During Surgical Operation.

Tuesday, 15th

ROYAL COLLEGE OF SURGEONS
3.45 P.M. Mr. C. le Q. Darcel: Comparative Pathology of Leukotic Conditions in Man and Fowl. (Imperial Cancer Research Fund lecture.)
5 P.M. Mr. D. Innes Williams: Chronically Dilated Ureter. (Hunterian lecture.)

INSTITUTE OF DERMATOLOGY, St. John's Hospital, Lisle Street, W.C.2
5.30 P.M. Dr. F. Ray Bettley: Atopy.

WEST END HOSPITAL FOR NERVOUS DISEASES, 40, Marylebone Lane, W.1
5.30 P.M. Dr. T. Rowland Hill: Neurological demonstration.

Wednesday, 16th

ROYAL EYE HOSPITAL
5.30 P.M. Mr. H. B. Jacobs: Relation of Nasal and Ocular Diseases.

INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. J. O. Oliver: Laboratory Diagnosis of Syphilis.

INSTITUTE OF UROLOGY, 10, Henrietta Street, W.C.2
5 P.M. Dr. A. H. Harkness: Non-gonococcal Urethritis.

EUGENICS SOCIETY
5.30 P.M. (Burlington House, Piccadilly, W.1.) Dr. Hermann Lehmann: Distribution of Sickle-cell Trait in Africans and Indian Aboriginals.

Thursday, 17th

ROYAL COLLEGE OF SURGEONS
3.45 P.M. Dr. J. Stretton Young: Benign Mammary Epithelial Hyperplasia. (Erasmus Wilson demonstration.)

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, W.C.1
5 P.M. Prof. F. C. Ormerod: Anatomy of Paranasal Sinuses.

HARVEIAN SOCIETY OF LONDON, 11, Chandos Street, W.1
8.15 P.M. Prof. Alan Moncrieff: Marasmus. Dr. R. E. Bonham Carter: Congenital Heart Disease. Dr. B. Schlesinger: Infantile Diarrhœa.

Friday, 18th

ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1
4.30 P.M. *Section of Epidemiology.* Dr. P. L. McKinlay: Cancer in Scotland.

ROYAL EYE HOSPITAL
5.30 P.M. Prof. C. A. Keele: Local Anæsthetics in Ophthalmology.

INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. Bettley: Clinical demonstration.

Appointments

DOOLEY, C. P., L.R.C.P.I., D.P.H.: asst. school M.O., Nottingham Education Committee.

GLYNN, J. D., L.R.C.P.I., D.P.M.: asst. psychiatrist, Whittingham Hospital, Preston.

HARGREAVES, BETTY, M.B. Lpool, M.R.C.O.G.: consultant obstetrician and gynæcologist, Wigan and Leigh Hospital Centre.

ZWIEFACH, ELIASZ, M.D. Cracow, F.R.C.S., D.L.O.: consultant ear, nose, and throat surgeon, West Middlesex Hospital, Isleworth.

South East Metropolitan Regional Hospital Board:

DAVIES, S. W., M.R.C.S., D.P.M.: consultant psychiatrist and physician superintendent, Leybourne Grange group of hospitals.

EDRIDGE, ANTHONY, M.R.C.S., D.A.: consultant anæsthetist, Tunbridge Wells group of hospitals.

PERCHARD, S. D., M.D. Lond., M.R.C.O.G.: consultant obstetrician and gynæcologist, Orpington and Sevenoaks group of hospitals.

SOWDEN, K. A., M.D. Lond., D. PHYS. MED.: consultant in physical medicine, Dartford, Medway and Gravesend group of hospitals.

Western Regional Hospital Board, Scotland:

CONNOLLY, MARGARET, L.R.C.P.E., D.A.: asst. anæsthetist, Glasgow Royal Infirmary.

COWIE, T. N., M.D. Glasg., D.M.R.D.: consultant radiologist, Western Infirmary, Glasgow.

HILLIS, B. R., M.D. Glasg., M.R.C.P.E., F.R.F.P.S.: chest physician, senior asst. to the area-supervising tuberculosis physician for the Dumfries and Galloway area, and deputy physician superintendent of Lochmaben Sanatorium.

Bloodless revolution

The introduction of 'Dextraven' has made available for the first time a dextran solution with controlled optimal molecular content which has been referred to as "narrow fraction dextran." It produces rapid elevation and prolonged maintenance of blood volume and normally ensures that over 50% of the dextran administered remains in the circulation after 24 hours — a longer period than has been possible with any previous blood volume restorer. 'Dextraven' is the preparation of choice for the restoration of blood volume. The British Encyclopædia of Medical Practice (Medical Progress, 1952) states —"There is little doubt that the narrow fraction dextran will revolutionise supportive therapy and may be regarded as one of the major advances of the year."—Truly a bloodless revolution.

Dextraven TRADE MARK

Developed by **research** *at*

Benger Laboratories

BENGER LABORATORIES LIMITED · HOLMES CHAPEL · CHESHIRE · ENGLAND

31

When convalescents need a pick-me-up

MOUSSEC

may well be the answer

Moussec is a perfect natural sparkling stimulant for cases of mental depression, debility and general apathy. Produced only from specially selected grapes by the entirely natural process of double fermentation and free from fortification by any form of spirit it is purity and goodness itself.

THE BABY BOTTLE (ONE GLASS SIZE) is both adequate and economical. It ensures that the patient gets the benefit of Moussec always in its freshest, most sparkling form.

Baby Moussec is obtainable from all Wine Merchants and Licensed Grocers at 2/3. There are also larger sizes at 4/4, 9/9 and 18/6.

MOUSSEC LTD., RICKMANSWORTH, HERTS.

Instantaneous records with the

COSSOR *direct-writing* ELECTRO-CARDIOGRAPH

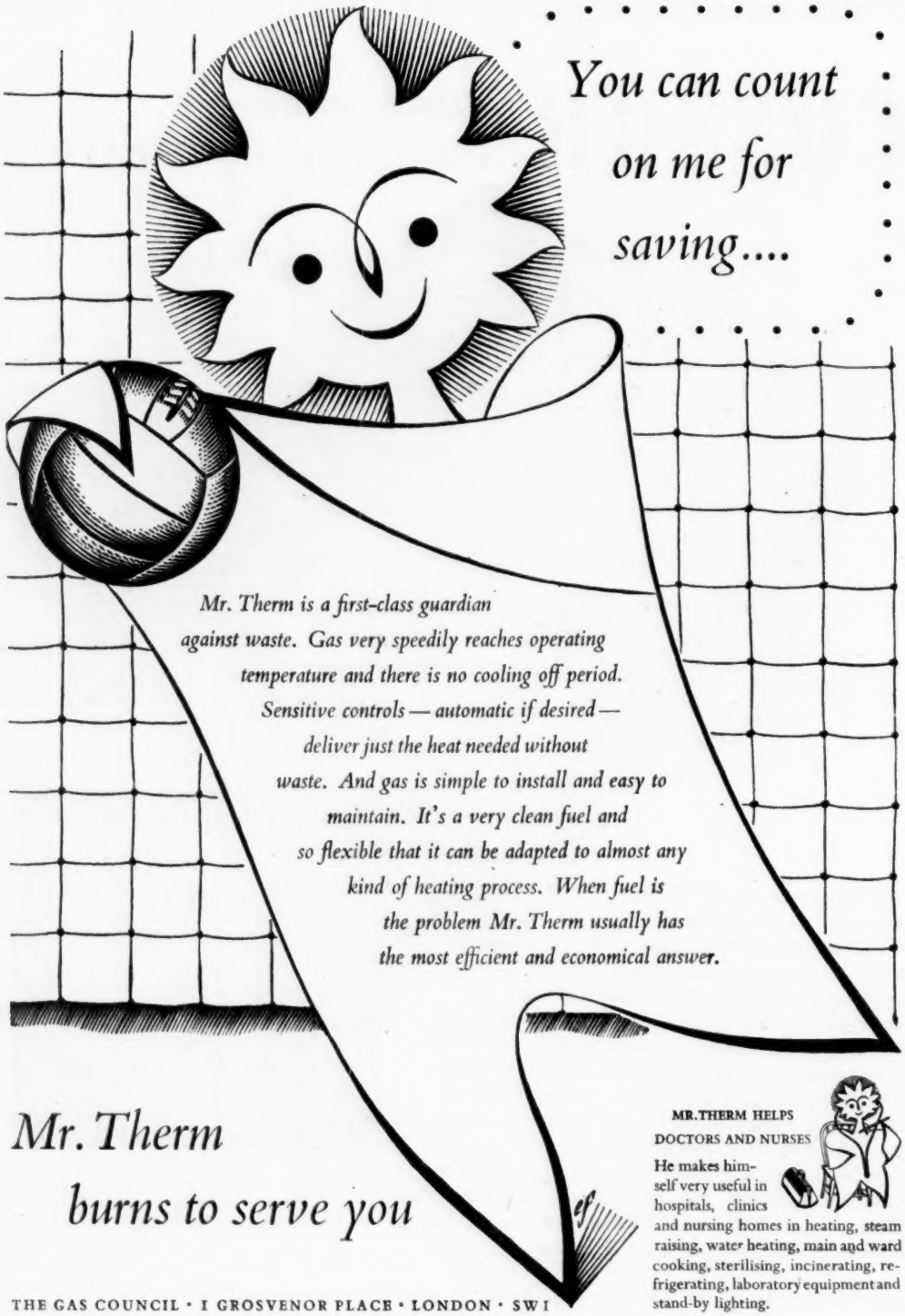
MODEL 1314

The most convenient aid in the diagnosis of cardiac conditions, the Cossor Electro-Cardiograph gives a direct visible and permanent record on special sensitized paper, without the complication and delay of photographic development. The calibrated recording paper is supplied in rolls of 150 ft., allowing a continuous run of up to 30 minutes. The instrument is supplied with a Switch Attachment Model 1351 for the selection of Augmented Unipolar Leads. The compact alloy case is of stove-enamel finish with neat zip-fastening showerproof cover. For use on A.C. mains 100/125 and 200/250 volts (50 cycles) or a suitably filtered D.C. rotary converter. A special sprung Trolley Model 1350, finished to match the cream enamel of the instrument, is available for hospital use. Demonstrations can be arranged on request.

A. C. COSSOR LTD., INSTRUMENT DIVISION, DEPT. No. 17. HIGHBURY, LONDON, N.5.

Telephone: CANonbury 1234 (33 lines) *Telegrams and Cables: Amplifiers, Norphone, London* *Codes: Bentley's*

C.T.29


You can count on me for saving....
Mr. Therm is a first-class guardian against waste. Gas very speedily reaches operating temperature and there is no cooling off period. Sensitive controls — automatic if desired — deliver just the heat needed without waste. And gas is simple to install and easy to maintain. It's a very clean fuel and so flexible that it can be adapted to almost any kind of heating process. When fuel is the problem Mr. Therm usually has the most efficient and economical answer.
Mr. Therm burns to serve you
MR. THERM HELPS DOCTORS AND NURSES
He makes himself very useful in hospitals, clinics and nursing homes in heating, steam raising, water heating, main and ward cooking, sterilising, incinerating, refrigerating, laboratory equipment and stand-by lighting.
THE GAS COUNCIL • 1 GROSVENOR PLACE • LONDON • SW1

Can pain smell?

No, pain cannot smell but, consciously or unconsciously, past experiences and events are recalled by odours.

Many of your patients have been conditioned from their earliest years to associate "hospital smells" with pain. When they find themselves in an atmosphere smelling of antiseptics and medicaments they can become tense and anxious, over aware of their symptoms and worries.

This situation is distressing for the patient and, frequently, irritating to the nursing staff. Even more disturbing, for patients and staff alike, are the greater malodours of certain conditions—incontinent patients, colostomies, suppurating wounds—and their treatment.

These undesirable and distressing odours in hospitals and in nursing homes can be banished easily and economically with Air-wick.

Physiologists have recorded that when certain pairs of odours are together present in appropriate relative concentrations, both are diminished. Developed as an application of this phenomenon, Air-wick contains a large number of compounds scientifically selected to achieve its results.

Air-wick is non-toxic, non-inflammable, and economical in use. For small wards, the normal bottle of Air-wick is extremely effective, while two new forms have recently been perfected specifically for hospitals: Air-wick Mist for sudden, local concentrations of odour, and the Air-wick Fan Unit for larger wards.

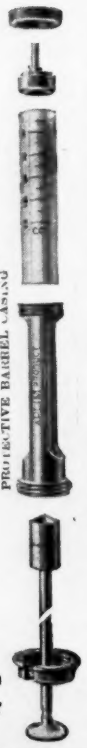
For the greater comfort and happiness of staff and patients, we confidently recommend the regular use of Air-wick. Full particulars of cost, installation and most efficient use may be had on application.

THE HOSPITAL SERVICE DEPARTMENT

Airwick Ltd.,
SLOUGH, BUCKS.

Air-wick THE EFFICIENT ODOUR-COUNTERACTANT

It's not the first cost that matters.....



When buying syringes, quality and the cost of replacements must be taken into account. Though 'Plim' syringes cost more **at first** than the ordinary kind, they are far more economical in the long run. For these reasons:

1. The strong protective metal casing of the glass barrel reduces breakage to a minimum.
2. If breakage does occur, you need replace only the barrel and piston, instead of buying a complete syringe. This means a saving of about **50 per cent.** compared with ordinary syringes.

Apart from the economy of 'Plim' syringes, they possess other important features:—

Perfect fit of piston to barrel
Accurate calibration · Precision manufacture
Individually-fitted pistons · No solder or cement
Sterilisation up to 250C.

SIZES: 1, 2, 5, 10 and 20 c.c.
INTERCHANGEABLE NEEDLE FITTINGS
Record, Luer and all other types. Side and central.

PLIM

HYPODERMIC SYRINGES
MANUFACTURERS : NORMAN PHETHEAN LTD
CROYDON ROAD · CATERHAM · SURREY
Telephone : Caterham 2460

A non-toxic Antiseptic Germicide

KEEDOSOL (FERRIS) provides a general antiseptic of high bactericidal potency yet possessing marked advantages not attributable to germicides of phenolic origin. It is non-poisonous, even in high concentration, non-injurious to living tissue, and its agreeable refreshing odour renders it pleasant in use. For the guidance of users of this modern germicide a table of recommended dilutions is affixed to each container.

Available in 4-oz.; 8-oz.; 16-oz.; and 80-oz. bottles and 1-gallon tins

KEEDOSOL

(FERRIS)

Samples on request

FERRIS & CO LTD

BRISTOL

Telephone 21481 Telegrams FERRIS BRISTOL

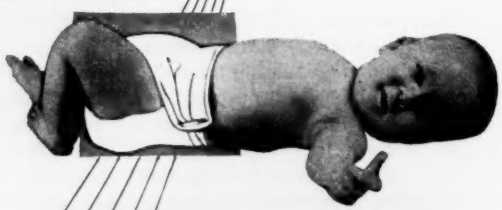
URINARY AMMONIA DERMATITIS

Clinical trials carried out at Maternity and Child Welfare clinics show that 87% of cases of urinary ammonia dermatitis healed within one week of treatment with DRAPOLENE and did not recur with its continued use as a preventive.

DRAPOLENE contains Benzalkonium chloride, a non-toxic quaternary ammonium compound.

FORMULA:
Benzalkonium Chloride, 0.01% in a water miscible base.

Available in:
2-oz. tubes (36/- doz.)
1-lb. and 4-lb. Dispensing jars (16/- lb.)



DRAPOLENE CREAM

Literature available on request from the Medical Department.

CALMIC LIMITED

CREWE HALL · CREWE · Tel. 3251-5

Bioglan

VITA-E 75 I.U.

GELUCAPS

(Vitamin E)

in the treatment of

Cardiovascular-Renal Diseases

after the method used at the Shute Institute for Clinical and Laboratory Medicine, Canada.

Each Gelucap contains a concentrate of natural esters (d,alpha-tocopherol acetate) from vegetable oils, type VI, equivalent to 75 mgm, d.l. alpha-tocopheryl acetate.

This therapy is today extensively prescribed in the U.K.

Sole Manufacturers:

THE BIOGLAN LABORATORIES LTD., HERTFORD, HERTS.

Tel. Address: "BIOGLAN TOLMERS" — *Literature on request* — Phone: CUFFLEY 2137

Notes on Clinical uses of Ribena

No. 3 **In Infective Conditions**

★

An extra-dietary supply of Vitamin C during the course of acute infections is physiologically sound, in view of the relationship between the vitamin and immunological reactions. Ribena is being increasingly employed in hospital and general practice in such infections as whooping-cough, measles, rheumatic fever, pneumonia, diphtheria and bronchitis. In the convalescence after such conditions, Ribena provides an important stimulus to complete recovery.

Contains not less than 20 mgms. of natural Vitamin C per fluid oz.

Syr Rib Nig

Ribena Regd

THE BLACKCURRANT JUICE VITAMIN C HEALTH DRINK

Please send for free sample of RIBENA

So delicious that patients never forget to take it daily

From Retail or Wholesale Chemists or direct from:—

H. W. CARTER & CO LTD · (DEPT. 7.A), THE ROYAL FOREST FACTORY · COLEFORD · GLOS

PRESCRIPTION for PRACTITIONERS

A Sickness Policy with the Medical Sickness Society

TAKE ONE NOW

For particulars please write to the Society

7 CAVENDISH SQUARE
LONDON, W.1 TELEPHONE: LANGHAM 2991

"I am starting **AT ONCE!..**"

Never again will you be delayed by a 'flat' battery when you have a powerful

SenTerCel Automatic Charger

It costs less than any other charger of equivalent output yet has so many valuable and unique features to appeal to the busy doctor.

Read on:

THE SENTERCEL AUTOMATIC BATTERY CHARGER: COSTS LESS than any other charger of equivalent power ● **BY** correctly charging your battery, it will lengthen its life ● **AUTOMATICALLY** adjusts itself to the voltage and condition of battery, and to mains voltages from 200-250 Volts A.C. ● **COMPLETELY RECHARGES** any normal battery from 'flat' almost overnight FOR LESS THAN A PENNY ● **IT IS NOT** a trickle charger but a first-class engineering job that will last for very many years ● **EASY** to install. Easy to use—just plug in and switch on.

PRICE ONLY £7·10·0 INCLUDING PLUG & SOCKET

Money back guarantee

Complete and post this request form **NOW!**

To **G.S.L. PRODUCTS LIMITED,**
Sunley's Island, Great West Road, Brentford, Middlesex.

Please send me one SenTerCel Automatic Battery Charger. I enclose cheque/money order for £7 10 0

Please send me further particulars. (delete item not required)

Name .....

Address ..... L.2.

INDICATED IN

Feverish Conditions Teething Minor Muscular Pains and other ailments of *Children*

A SAFE AND ACCURATE DOSE OF ASPIRIN—There is little fear of an anxious mother giving too large a dose of Angiers Junior Aspirin for Children. Each tablet contains 1¼ grains of Aspirin.

IN AN EASY TO TAKE TABLET—The pleasant orange flavour and sweetening in this small pink tablet makes Angiers Junior Aspirin acceptable to children even if sucked or chewed.

WITH A SAFEGUARD AGAINST GASTRIC IRRITATION—The combination of di-calcium phosphate with the aspirin guards against any irritation caused by the acid effect of aspirin alone.

Acid. Acetylsalicylic. 1.25 grains. Di-Calcium Phosphate 1.50 grains, orange-flavoured and sweetened.

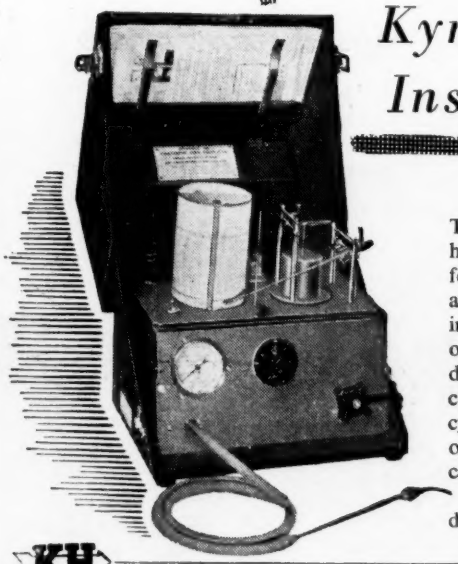
ANGIERS JUNIOR ASPIRIN *for children*

FOR ADULTS. A palatable tablet incorporating Di-Calcium Phosphate makes this preparation especially valuable for use by those adults to whom plain aspirin is unacceptable.

ANGIER CHEMICAL CO. LTD., LONDON, S.E.1
Laboratories—South Ruislip, Middlesex

KH25

The **NEW** *Sharman's Kymographic Tubal Insufflation Apparatus*



This apparatus for recording a graph of insufflation has now been produced in an improved and simplified form. The whole control is now obtained by means of a single 4-position flow control valve instead of the two infinitely variable valves previously fitted. The two rates of flow available for insufflation are accurately pre-set during manufacture. The improved valve design ensures consistent operation over long periods. The CO_2 storage cylinder capacity is sufficient for a large number of operations without changing. Made with traditional care, finished in black leatherette with glossy grey instrument panels and supplied with a spare carbon dioxide cylinder and charts.

KH

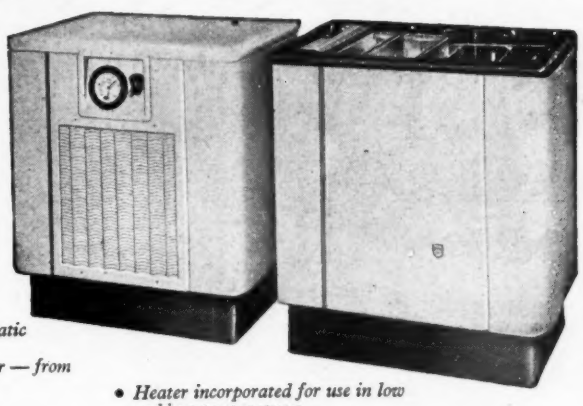
KELVIN & HUGHES (INDUSTRIAL) LTD 2, CAXTON STREET, LONDON, S.W.1
110, BOTHWELL STREET, GLASGOW

RADIOGRAPHY IN HOT CLIMATES

developing problems ended with this

PHILIPS

REFRIGERATED PROCESSING UNIT



- *Thermostatically controlled — fully automatic in action.*
- *Will cool 20 galls. of water per hour — from 105°F. to 65°F.*
- *Film capacity — 60 per hour.*
- *Films always washed in cooled water.*
- *Separate Tank and Cooler. Cooler can be installed outside dark room.*
- *Heater incorporated for use in low ambient temperatures.*
- *All insulation material insect-proof.*
- *Complete and easy access for inspection.*

ENABLES GOOD RADIOGRAPHY TO YIELD CONSISTENTLY GOOD RADIOGRAPHS

Users commend its performance and reliability

SEND POSTCARD FOR FULL INFORMATION

PHILIPS ELECTRICAL LIMITED

X-RAY DEPARTMENT CENTURY HOUSE SHAFTESBURY AVENUE · LONDON · W.C.2

ID962A)

£323 in cash at age 21

(or a life policy for £1,044 with profits) is provided by The Policy for Children by a premium of £12 a year paid from the birth of a child by a parent or friend. Enquire for details for a child of any age up to 16.

The Equitable Life Assurance Society

(founded 1762)

19, Coleman Street, London, E.C.2

No shareholders No agents

For festive occasions.. the Quality cigarette

PLAYER'S No.3

[3P 120A]

"You'll have some too, Nurse, if you know what's good for you!"

Bourn-vita... made with malt, cocoa, milk, sugar and eggs . . . to persuade the mind to shelve its problems and the body to relax into deep, untroubled sleep.

sleep sweeter-

Bourn-vita

made by Cadburys

For prompt, safe relief

. . . from the spasms associated with whooping cough, bronchitis or winter cough . . . from distressing catarrhal congestion arising from influenza and the common cold . . . the indication is vapour inhalant treatment.

WRIGHT'S *Coal Tar*

INHALER & VAPORIZER

with VAPORIZING LIQUID

Complies with the new specifications set out in Part IV of the N.H.S. Drug Tariff.
Supplies freely available for prescription.

WRIGHT LAYMAN & UMNEY LTD.
42/50, Southwark Street, London, S.E.1.

Manufacturers and Proprietors of Wright's Coal Tar Soap

WICKHAM HEAD LAMP

This striking Head Lamp with a carefully designed optical system giving a brilliant circular patch of even illumination and using ordinary point filament torch lamps.

The head plate is of ultra-light-weight but very strong aluminium alloy which is untarnishable.

The head pad is of comfortable soft sponge-rubber.

The cable is of specially flexible synthetic plastic, and there is a clip on the adjustable elastic headband to retain the cable in a comfortable position.

The Head Lamp weighs only 3 ozs. (85 grammes); its light weight makes it very comfortable for use.

No. 19 Wickham Head Lamp with standard adaptor to fit in Gowlland Handles or, at the same price, with two pin plugs for working from a transformer or battery.

Can also be supplied Cat. No. 119, on rigid unbreakable black bakelite headband.

List No. 158 illustrates and describes in full these Head Lamps.

Gowlland
electric diagnostic instruments

Made in England and obtainable from all Surgical Supply Houses

PARKINSON & COWAN INDUSTRIAL PRODUCTS

THE Parkinson and Cowan Group is well known for its production of domestic appliances, meters and instruments. It also produces a large volume of industrial equipment. In particular, Parkinson and Cowan Gas Meters operates a rapidly developing business in industrial heating apparatus, notably in infra red drying equipment. The growth of these activities makes it necessary to establish a new Division of the Group to foster them. This Division will be known as

PARKINSON & COWAN INDUSTRIAL PRODUCTS

and will operate from

Cottage Lane Works, City Road, London, E.C.1 Telephone: Clerkenwell 1766/7

1834

H. K. LEWIS & Co. Ltd.

MEDICAL PUBLISHERS AND BOOKSELLERS

TEXTBOOKS AND WORKS IN MEDICAL, SURGICAL AND GENERAL SCIENCE OF ALL PUBLISHERS

Catalogues on application. Please state interests.

FOREIGN BOOKS: Select stock. Books obtained from abroad under Board of Trade licence.
SECOND-HAND BOOKS: A constantly changing large stock of Medical and Scientific Literature on view, classified under subjects.
MEDICAL STATIONERY: Loose-Leaf Case Books, Card Index Systems, etc.

MEDICAL AND SCIENTIFIC LENDING LIBRARY

Annual Subscription from Twenty-five Shillings Prospectus on application

The Library Catalogue revised to December, 1949, containing a classified Index of Authors and Subjects. Pp. xii + 1152. To subscribers 17s. 6d. net; to non-subscribers 35s. net; postage 1s. 3d.
Supplement 1950–52. To subscribers 3s. net; to non-subscribers 6s. net; postage 6d.

H. K. LEWIS & Co. Ltd., 136 GOWER STREET, LONDON, W.C.1 Phone: EUSton 4282

Newly Recognized Palatable Source of Potassium . . . .

The Neglected Mineral

Valentine's Meat Juice, with its high content of soluble potassium salts (equivalent to 74-97 mg. KCl per cc.) together with other inorganic salts, meat bases and small amounts of soluble proteins is a valuable dietary supplement, furnishing practical amounts of potassium in palatable form.

VALENTINE COMPANY, INC., RICHMOND, VA.

Valentine

Valentine's MEAT JUICE

THE WORLD'S GREATEST BOOKSHOP

FOYLES
FOR BOOKS

Famed Centre for Medical Books

New, secondhand and rare Books on every subject.
Stock of over 3 million volumes.
Subscriptions taken for British, American and Continental medical magazines.

119-125 CHARING CROSS ROAD LONDON WC2
Gerrard 5660 (16 *lines*) ★ *Open* 9-6 (*inc. Sats.*)
Nearest Station: Tottenham Court Road

JENNER INSTITUTE Glycerinated VACCINE LYMPH

PREPARED IN ACCORDANCE WITH THE THERAPEUTIC SUBSTANCES REGULATIONS (BRITISH PRODUCT)

Telephone: BATTERSEA 1347

SINGLE VACCINATION TUBES - - - 12/- dozen. Postage extra
LARGE TUBES (EXPORT only) sufficient for 5 vaccinations, 20/- dozen

Telegrams: "JENVACTER, SOUPHONE, LONDON" (2 words)

JENNER INSTITUTE FOR CALF LYMPH LTD., 73, Battersea Church Road, S.W.11

PENSION SCHEMES

for staffs

need expert advice

For advice based on experience of setting up hundreds of schemes to suit individual requirements, write to

SCOTTISH WIDOWS' FUND

Head Office: 9 St. Andrew Square, Edinburgh, 2

London Offices: 28 Cornhill, E.C.3 17 Waterloo Place, S.W.1

CHISWICK HOUSE

PINNER, MIDDLESEX

Telephone: PINNER 234

A Private Home for the Treatment and Care of Mental and Nervous Illnesses in both Sexes.

A modern house, 12 miles from Marble Arch, in attractive secluded grounds. Patients treated under Certificate, Temporary or Voluntary status. Modern forms of treatment, including psychotherapy, narco-analysis, modified insulin, occupational therapy, E.C.T., etc. Fees from 12 guineas a week.

DOUGLAS MACAULAY, M.D., D.P.M.

HEIGHAM HALL, NORWICH

PRIVATE MENTAL HOME for Nervous and Mental illness. All types of treatment carried out. Accommodation for Alcoholics and Addicts available. Special Geriatric Unit now open. Fees from 6 gns. per week upwards according to requirements.

Apply to Dr. J. A. SMALL Telephone: Norwich 20080

NEWLANDS

NURSING AND CONVALESCENT HOME

LANGLEY HILL, KINGS LANGLEY (Nr. Watford), HERTS

Telephone: Kings Langley 2519 and 3333

Easy access by car, train, or Green Line Coach

The modern home at moderate terms (from 7 gns. upwards)

PARK SANATORIUM

(FORMERLY SANATORIUM TURBAN)

DAVOS-PLATZ, SWITZERLAND

First-class house, 5,150 feet above sea-level. Large park and wood belonging to the Sanatorium. Terms for board and residence, including room, medical treatment, etc., from Fcs. 18 per day. Prospectus.

Medical Superintendent, F. CHARLES, M.D.

CLIFFDEN, TEIGNMOUTH

For the early treatment of nervous disorders and patients needing rest and care

A well-appointed House with spacious balconies and extensive views of the South Devon Coast. Beautiful garden and own dairy in 35 acres
In the same grounds, ROWDENS, a comfortable house with lovely views. Private road to the beach
There is also a charming house, EBWORTHY, MANATON, DARTMOOR, situated in 25 acres, 1100 ft. up for bracing moorland air

Resident Physicians—BERTHA M. MULES, M.D., B.S. ANNE S. MULES, M.R.C.S., L.R.C.P. *Telephones*—TEIGNMOUTH 289 and 337

CHEADLE ROYAL CHEADLE CHESHIRE

A Registered Hospital for MENTAL DISEASES and its Seaside Branch, GLAN-Y-DON, Colwyn Bay, N. Wales

The object of this Hospital is to provide the most efficient means for the treatment and care of patients of both sexes suffering from MENTAL and NERVOUS DISEASES. The Hospital is governed by a Committee appointed by Trustees. Deep and Modified Insulin Coma; E.C.T., and Psychotherapeutic treatment given. VOLUNTARY, TEMPORARY, AND CERTIFIED PATIENTS RECEIVED.

For Terms and further information apply to the MEDICAL SUPERINTENDENT *Telephone*: GATLEY 2231

RUTHIN CASTLE, NORTH WALES

A Private Clinic, the first in Great Britain, for investigation and treatment of all forms of disease, except infectious and mental

Nursing, dietetic, massage, x-ray and laboratory departments Central heating and a lift to all floors

Inclusive charges Apply SECRETARY Telephone: Ruthin 66

ST. ANDREW'S HOSPITAL

FOR NERVOUS AND MENTAL DISORDERS

NORTHAMPTON

PRESIDENT: THE EARL SPENCER

MEDICAL SUPERINTENDENT: THOMAS TENNENT, M.D., F.R.C.P., D.P.H., D.P.M.

This Registered Hospital is situated in 130 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble; temporary patients, and certified patients of both sexes are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE

This is a Reception Hospital in detached grounds with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the complete investigation and treatment of Mental and Nervous Disorders by the most modern methods; insulin treatment is available for suitable cases. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical baths, Piombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultraviolet Apparatus, and a Department for Diathermy and High-frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research. Psychotherapeutic treatment is employed when indicated.

MOULTON PARK

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupational therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit growing.

BRYN-Y-NEUADD HALL

The seaside house of St. Andrew's Hospital is beautifully situated in a park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (TELEPHONE: Northampton 4354 (3 lines)), who can be seen in London by appointment.

Vacancies

Page

ACADEMIC AND EDUCATIONAL SECTION 46

ANÆSTHETICS
Connaught, E.17. Sr. H.O. 48
Paddington, W.9. H.O. 49
Royal Free, W.C.1. Sr. H.O. & H.O. 49
Royal National T.N.&E. Reg. .. 49
St. Olave's, S.E.16. Sr. H.O. .. 49
University College, W.C.1. Sr. H.O. 50
Aylesbury, Royal Bucks & Assoc. Hosps. M.C. Sr. H.O. 50
Blackburn & Dist. H.M.C. Sr. H.O. .. 51
Blackpool. Victoria. Sr. H.O. .. 51
Bradford. St. Luke's. H.O. 51
Bury & Rossendale H.M.C. Sr. H.O. & Reg. 51
Bury St. Edmunds. West Suffolk Gen. Reg. 51
Cambridge. Addenbrooke's. Sr. H.O. 52
Dartford H.M.C. Locum Reg. .. 52
Halifax Gen. Jr. H.M.O. 53
Leeds R.H.B. Regs. 54
Liverpool United Hosps. P.-t. Cons. 47
Manchester R.H.B. Reg. 55
Manchester. West Manchester H.M.C. Sr. H.O. 55
Mid-Kent H.M.C. Sr. H.O. 55
Nottingham. City. Sr. H.O. .. 56
Plymouth. South Devon & East Cornwall. H.O. 57
Reading & Dist. H.M.C. Sr. H.O. .. 58
Romford. Oldchurch. Sr. H.O. .. 57
Sheffield R.H.B. Locum Sr. H.M.O. 48
Sheffield R.H.B. & United Sheffield Hosps. P.-t. Cons. 47
Sheffield R.H.B. Locum Anæsthetist 47
Shrewsbury. Royal Salop Infy. Sr. H.O. 58
Sidcup. Queen Mary's. Sr. H.O. .. 58
Slough. Upton. Reg. 58
Southampton. Royal South Hants Hosp. Reg. 58
South West Met. R.H.B. Cons. .. 47
St. Albans City. P.-t. Clin. Asst. .. 59
Swansea. Morriston. Sr. H.O. .. 59
Warwickshire. South Warwickshire Hosp. Group. Sr. H.O. 60
Australia. Royal Melbourne. Asst. Director 48

CARDIOLOGY
Newcastle Gen. H.O. 56

CASUALTY
Acton, W.3. Sr. H.O. 48
Hackney, E.9. H.O. 48
National Temperance, N.W.1. Sr. H.O. 49
St. Leonard's, N.1. Sr. H.O. .. 50
St. Nicholas, S.E.18. H.O. 50

Page

Wanstead, E.11. Sr. H.O. 50
Westminster Child's., S.W.1. H.O. or Sr. H.O. 50
Blackpool. Victoria. H.O. 51
Brighton. Royal Sussex County. Pre-reg. H.O. 52
Hertford County. H.O. 53
Luton & Dunstable. H.O. 54
Newcastle Gen. H.O. 56
Newport, Mon. Royal Gwent. Sr. H.O. 56
Norwich. Norfolk & Norwich. H.O. 56
Nottingham Gen. Reg. 56
Nottingham Gen. Sr. H.O. 57
Portsmouth Group H.M.C. Sr. H.O. 57
Salisbury Gen. Sr. H.O. 58
Scunthorpe & Dist. War Mem. Reg. 58
Sheffield R.H.B. Sr. H.M.O. 47

CHEST AND TUBERCULOSIS
London Chest. H.O.'s & Sr. H.O.'or Reg. 49
Angus & Strœathro & Brechin B.O.M. Jr. H.M.O. 50
Aylesbury. Royal Bucks & Assoc. Hosps. M.C. H.O. 50
Birmingham R.H.B. Sr. Reg. .. 51
Chelmsford. Broomfield. Locum Sr. H.M.O. 46
Driffield. Northfield San. Sr. H.O. .. 52
Leeds R.H.B. Sr. H.M.O. 47
Liverpool. Walton. Sr. H.O. .. 55
Maidstone. Lenham San. Jr. H.M.O. 55
Maidstone. Preston Hall. Sr. H.O. .. 56
Manchester R.H.B. Reg. 55
Market Drayton. Cheshire Joint San. Jr. H.M.O. or Sr. H.O. 56
Newcastle Gen. H.O. 56
Newcastle. Walkergate. Sr. H.O. .. 56
Orpington. Kent. H.O. 57
Selby. Gateforth. Sr. H.O. 58
Warwick. King Edward VII Mem. San. Sr. H.O. 60

DENTAL SURGERY
Plymouth. South Devon & East Cornwall. H.O. 57

EAR, NOSE, AND THROAT
North Middlesex, N.18. P.-t. Clin. Asst. 49
North West Met. R.H.B. P.-t. Cons. 46
Royal Nat. T.N.&E. H.O. 49
Royal Nat. T.N.&E. Sr. Reg. .. 49
Whittington, N.19. Reg. 50
Birmingham R.H.B. Regs. 51
Blackpool. Victoria. Sr. H.O. & H.O. 51
Bournemouth & East Dorset H.M.C. H.O. 51
Dartford H.M.C. H.O. 52

Page

Exeter Clinical Area. P.-t. Clin. Asst. 53
Ipswich. East Suffolk & Ipswich. H.O. 54
Manchester R.H.B. Reg. 55
Manchester. St. Anne's. Sr. H.O. .. 55
Manchester. West Manchester H.M.C. Pre-reg. H.O. 55
North West Met. R.H.B. P.-t. Cons. 46
Norwich. Norfolk & Norwich. Locum Reg. 56
Plymouth Clinical Area. Reg. .. 57
Reading. Royal Berkshire. H.O. .. 57
Sheffield R.H.B. Sr. Reg. 58
Shrewsbury. Eye, Ear & T. Sr. H.O. 58
Swansea. Sr. H.O. 59
Wolverhampton H.M.C. H.O. .. 61
South Africa. Provincial Admin. of Cape of Good Hope. Med. Prac. (Grade E) 48

GERIATRICS
Newcastle Gen. H.O. 56
York A & Tadcaster H.M.C. Jr. H.M.O. 60

HÆMATOLOGY
South West Met. R.H.B. Jr. H.M.O. 58

INFECTIOUS DISEASES
Stoke-on-Trent. Bucknall Isolation. Sr. H.O. 59
Windygates. Cameron I.D. H.O. 61

MEDICINE
Acton, W.3. H.O. 48
Battersea Gen., S.W.11. H.O. .. 48
Bethnal Green, E.2. H.O.'s 48
Dreadnought Seamen's, S.E.10. Pre-reg. H.O. 48
Mildmay Mission, E.2. Pre-reg. H.O. 49
Royal Free, W.C.1. Jr. H.M.O.'s .. 49
St. Francis', S.E.22. Sr. H.O. .. 49
West London, W.6. H.O.'s 50
Aylesbury. Royal Bucks & Assoc. Hosps. M.C. Sr. H.O. & H.O. .. 50
Bath Clinical Area. P.-t. Clin. Asst. 51
Bideford & Dist. H.O. 51
Birmingham. Dudley Road. Sr. H.O. 51
Brighton. Royal Sussex County. Pre-reg. H.O.'s 52
Bromsgrove. All Saints'. H.O. .. 51
Cheltenham Gen. H.O. 52
Dartford H.M.C. H.O. 52
Dover. Buckland. H.O. 53
Hastings. Royal East Sussex. Pre-reg. H.O. 53
Hove Gen. Pre-reg. H.O. 54
Kidderminster & Dist. Gen. H.O. .. 54
Kingston. Surrey. Pre-reg. H.O. .. 54
Lancaster. Royal Lancaster Infy. Sr. H.O. 54
Leeds R.H.B. Regs. 54

Page

Liverpool. Walton H.O.'s 55
Lymington, Hants. Sr. H.O... .. 54
Maidenhead. H.O. 55
Maidstone. West Kent Gen. H.O. .. 55
Manchester R.H.B. Cons. 47
Manchester. West Manchester H.M.C. Sr. H.O. 55
Newcastle Gen. H.O.'s 56
Newcastle. Walkergate. H.O. .. 56
Newmarket Gen. H.O. 56
Newport, Mon. St. Woolos. H.O. .. 56
Nottingham Gen. H.O. 57
Nottingham. Highbury. Sr. H.O. .. 56
Plymouth. South Devon & East Cornwall. H.O. 57
Portsmouth Group H.M.C. Sr. H.O.'s, H.O. & Pre-reg. H.O.'s 57
Shrewsbury. Royal Salop Infy. & Copthorne. H.O. 58
Stafford. Staffordshire Gen. Infy. H.O. 59
Stoke-on-Trent. North Staffs Royal Infy. Pre-reg. H.O.'s 59
Swansea. Morriston. Sr. H.O. .. 59
Swansea. Mount Pleasant. Jr. H.M.O. 59
Taplow. Canadian Red Cross Mem. H.O. 59
Tunstall. Burslem, Haywood & Tunstall War Mem. H.O. 60
Watford. Shrodells. H.O. 59
Welsh R.H.B. Sr. Reg. 60
Weston-super-Mare Gen. H.O. .. 60
Worcester Royal Infy. Sr. H.O. .. 60
Workington Infy. Pre-reg. H.O. or Sr. H.O. 60
New Zealand. Otago Hosp. Board. Med. Sup. 48
Northern Ireland Hosps. Auth. M.O. 61
South Africa. Provincial Admin. of Cape of Good Hope. Med. Prac. (Grade G) 48

NEUROLOGY

Haywards Heath. Hurstwood Park. Sr. H.O. 53
North West Met. R.H.B. P.-t. Cons. 47

NEUROSURGERY

Northern Ireland Hosps. Auth. Sr. H.O., Reg. or Sr. Reg. 61

OBSTETRICS AND GYNÆCOLOGY

Bethnal Green, E.2. H.O. 48
City of London Maternity, N.4. H.O. 48
Hammersmith, W.12. H.O. 48
Hammersmith, W.12. Sr. Reg. .. 48
North Middlesex, N.18. H.O. .. 49
Barking. Sr. H.O. 50
Cambridge. Maternity. H.O. .. 52
Canterbury. Kent & Canterbury. H.O. 52
Epsom Dist. Sr. H.O. 53
Folkestone. Royal Victoria. H.O. .. 53
Grimsby Gen. Sr. H.O. 53
Hampton Court, Middx. Bearsted Mem. H.O. 53
Kendal. Westmorland County. Sr. H.O. 54
Kingston. Surrey. H.O. & Pre-reg. H.O. 54
Liverpool. Walton. H.O.'s 55
Luton & Dunstable. H.O. 54
Luton Maternity. H.O. 54
Newcastle Gen. H.O.'s 56
Plymouth. South Devon & East Cornwall. H.O. 57
Romford. Rush Green. H.O... .. 57
Southampton Gen. H.O.'s 59
St. Andrews. Craigtoun Maternity. H.O.'s 59

OPHTHALMOLOGY

Derby. Derbyshire Royal Infy. Reg. 53
Hastings H.M.C. Locum Reg. .. 53
Sheffield R.H.B. Sr. H.M.O... .. 47
Shrewsbury. Eye, Ear & Throat. Sr. H.O. 58
Southampton Eye. Sr. H.O... .. 59
Wolverhampton H.M.C. H.O. .. 61
York A & Tadcaster H.M.C. Sr. H.O. 60

ORTHOPÆDICS

King Edward Mem., W. Sr. H.O. .. 49
Appley Bridge. Wrightington. Jr. H.M.O. 50
Aylesbury. Royal Bucks & Assoc. Hosps. M.C. Sr. H.O.'s 50
Blackpool. Victoria. Sr. H.O. .. 51
Bournemouth. Royal Victoria. Sr. H.O. 51
Braintree. Black Notley. H.O. .. 52
Coventry Group 20 H.M.C. Sr. H.O. & H.O.'s 52
Dartford H.M.C. H.O. 52
East Cumberland H.M.C. H.O. .. 53
Eccleshall. Standon Hall Orthopædic. Sr. H.O. 53
Halifax. Royal Halifax Infy. Sr. H.O. 53

Page

Hexham Gen. Pre-reg. H.O... .. 54
Kirkcaldy Gen. H.O. or Sr. H.O. .. 54
Leeds R.H.B. Regs. 54
Leeds. Woodlands Orthopædic. H.O. 54
Liverpool. Walton. Sr. H.O. & H.O. 55
Luton & Dunstable. H.O. 54
Manchester R.H.B. Regs. 55
Newcastle Gen. H.O.... 56
Nottingham Gen. Sr. H.O. 56
Romford. Oldchurch. H.O. 57
Salford Royal. Sr. H.O. 58
Sheffield R.H.B. Sr. H.M.O... .. 47
Shrewsbury. Royal Salop Infy. Sr. H.O. 58
Stoke-on-Trent. North Staffs Royal Infy. Sr. H.O. & H.O. 59
Swansea. Sr. H.O. 59
Wakefield. Clayton. Sr. H.O. .. 60
Wakefield. Pinderfields Gen. Sr. H.O. 60
Warwick. H.O. 60
Whitehaven. Cumberland. H.O. or Sr. H.O. 60

PÆDIATRICS

North Middlesex, N.18. H.O. .. 49
St. George's, S.W.1. H.O. 50
Birmingham. Dudley Road. H.O.'s 51
Coventry Group 20 H.M.C. Pre-reg. H.O. 52
Derby. Derbyshire Child's. Sr. H.O. 52
Derby. Derbyshire Child's. Pre-reg. H.O. or Sr. H.O. 53
Hemel Hempstead. West Herts. H.O. 53
Manchester. Duchess of York Hosp. for Babies. H.O. 55
Newcastle Gen. H.O.'s 56
Plymouth. South Devon & East Cornwall. H.O. 57
Portsmouth Group H.M.C. H.O.'s .. 57
Scotland. Western R.H.B. Cons. .. 47
Scotland. Western R.H.B. Reg. .. 58
Sheffield United Hosps. H.O. .. 58
Stoke-on-Trent. City Gen. H.O. .. 59
Windsor. King Edward VII. H.O... 60

PATHOLOGY

Elizabeth Garrett Anderson, N.W.1. H.O. 48
St. George's, S.W.1. Sr. H.O. .. 50
Whipps Cross, E.11. Sr. H.O. .. 50
Bury & Rossendale H.M.C. Sr. H.O. 51
Glasgow Royal Infy. Sr. H.O. .. 53
Leeds R.H.B. Sr. H.M.O. 46
Liverpool. Walton. Sr. H.O. .. 55
Manchester United Hosps. Sr. H.O... 55
Nottingham City. Reg. 56
Sheffield United Hosps. Sr. H.O. .. 58
South West Met. R.H.B. Cons. .. 47

PSYCHIATRY

St. George's, S.W.1. Reg. 50
Aylesbury. Royal Bucks & Assoc. Hosps. M.C. Sr. H.O. 50
Birmingham R.H.B. Regs. 51
Bristol Clinical Area. Sr. Regs. .. 52
Cambridge. Fulbourn. Sr. H.O. .. 52
Denbigh. North Wales Hosp. for Nervous & Mental Dis. Sr. H.O. or Jr. H.M.O. 52
East Anglian R.H.B. Sr. H.M.O. .. 46
Hailsham, Hellingly Mental. Jr. H.M.O. 53
Leeds R.H.B. Sr. H.M.O.'s 47
Lincoln. Bracebridge Heath. Jr. H.M.O. 55
Liverpool R.H.B. Sr. H.M.O. .. 47
Portsmouth. St. James'. Sr. H.O. .. 57
Sheffield R.H.B. Sr. H.M.O.'s .. 47
Warwick. Central Mental. Sr. H.O. & Jr. H.M.O. 60
Woodford Bridge, Claybury. Sr. H.O. 60
York A & Tadcaster H.M.C. Jr. H.M.O. 60

RADIOLOGY

London, E.1. Sr. H.O. 48
North East Met. R.H.B. P.-t. Cons. 46

RHEUMATOLOGY

Taplow. Canadian Red Cross Mem. H.O. 59

SURGERY

Battersea Gen., S.W.11. Jr. H.M.O. 48
German, E.8. Pre-reg. H.O. 48
Hosp. for Sick Child., W.C.1. Sr. Reg. 50
London, E.1. Reg. & Sr. H.O. .. 49
Mildmay Mission, E.2. Sr. H.O. .. 49
National Temperance, N.W.1. H.O.'s 49
North West Met. R.H.B. P.-t. Cons. 46
Prince of Wales's Gen., N.15. H.O. .. 49
Royal Cancer, S.W.3. H.O... .. 49
St. Leonard's, N.1. H.O. 49
St. Mary's, W.2, & N.W. Met. R.H.B. Sr Reg 50
Ashford, Kent. Sr. H.O. 50
Aylesbury. Royal Bucks & Assoc. Hosps. M.C. H.O. 50
Barnstaple. North Devon Infy. Pre-reg. H.O. 50

Page

Bedford Gen. Pre-reg. H.O.'s .. 51
Birmingham Accident. H.O.'s. .. 51
Birmingham. Dudley Road. H.O.'s 51
Birmingham. Solihull. Sr. H.O. .. 51
Birmingham. Solihull. Pre-reg. H.O. 51
Blackpool. Victoria. H.O.'s 51
Bolton & Dist. H.M.C. H.O... .. 51
Brighton Gen. Sr. H.O. & H.O. 51/52
Brighton. Royal Sussex County. Pre-reg. H.O.'s & H.O. 52
Bromsgrove. All Saints'. H.O. .. 52
Bury & Rossendale H.M.C. Sr. H.O. & Pre-reg. H.O. 51
Caerphilly Dist. Sr. H.O.'s & H.O. .. 52
Canterbury. Kent & Canterbury. H.O. 52
Chelmsford. St. John's. Sr. H.O. .. 52
Cheltenham Gen. H.O. 52
Chichester Royal West Sussex. H.O.'s 52
Colchester. Essex County. H.O. 52
Coventry Group 20 H.M.C. H.O.'s.. 52
Darlington Mem. H.O. 52
Dover. Royal Victoria. H.O. .. 53
Dumfries & Galloway Royal Infy. Sr. H.O. 53
Folkestone. Royal Victoria. H.O. .. 53
Griffithstown. Mon. County. Sr. H.O. 53
Hastings. Royal East Sussex. H.O. 53
Haverfordwest. Pembroke County War Mem. H.O. 53
Hemel Hempstead. West Herts. Locum H.O... 53
Hereford Gen. H.O... 53
Hexham Gen. Sr. H.O. & Pre-reg. H.O. 54
Hounslow. Middx. H.O. 54
Hove Gen. H.O. 54
Hull. Victoria Hosp. for Sick Child. H.O. 54
Kidderminster & Dist. Gen. H.O. .. 54
Kingston. Surrey. Pre-reg. H.O.'s .. 54
Kirkcaldy Gen. H.O.'s 54
Leamington. Warneford Gen. H.O. 54
Leeds R.H.B. Reg. 54
Lincoln County. Reg... 55
Liverpool. Walton. H.O.'s 55
Luton & Dunstable. H.O.'s 54
Maidstone. West Kent Gen. H.O. .. 55
Maidstone. West Kent Gen. Sr. H.O. 55
Manchester. Booth Hall Child's. H.O. 55
Manchester R.H.B. Reg. 55
Manchester. West Manchester H.M.C. Pre-reg. H.O.'s & H.O. 55
Mexborough. Montagu. Reg. 55
Newark Gen. Reg. 56
Newcastle Gen. H.O.'s 56
Newport, I.W. St. Mary's. Sr. H.O. & H.O. 56
Newport, Mon. St. Woolos. Sr. H.O. 56
Newton Abbot. S. Devon. Sr. H.O... 56
Norwich. Norfolk & Norwich. H.O.'s 56
Nottingham Gen. H.O.'s 57
Plymouth. South Devon & East Cornwall. H.O.'s 57
Poole Gen. Pre-reg. H.O.'s 57
Portsmouth Group H.M.C. Pre-reg. H.O.'s 57
Ramsgate Gen. H.O. 57
Redhill County. Reg. 57
Romford. Victoria. H.O. 57
Rotherham. Moorgate Gen. Reg. .. 58
Rugby. Hosp. of St. Cross. H.O. .. 57
Ryde, I.W. Royal I.W. County. H.O. 58
Sheffield United Hosps. Sr. Reg. .. 58
Southampton Gen. H.O.'s 59
Southampton. Royal South Hants. H.O. 58
Southport Gen. Infy. Sr. H.O. .. 59
Stafford. Staffordshire Gen. Infy. H.O. 59
St. Albans City. H.O... 59
St. Helens, Lancs. H.O. 59
Stoke-on-Trent. North Staffs Royal Infy. H.O. 59
Torquay. Torbay. H.O. 60
Wakefield Gen. Sr. H.O. 60
Warrington Infy. H.O. 60
Warwick. H.O. 60
Watford & Dist. Peace Mem. H.O. .. 59
Weston-super-Mare Gen. H.O. .. 60
Wolverhampton H.M.C. H.O.'s .. 61
Worthing. Reg. 60

GENERAL

New York. Albany. Internships & Residencies 61

PUBLIC APPOINTMENTS 61

GENERAL PRACTICE 62

MISCELLANEOUS 62

The Terms and Conditions of Service of Hospital Medical and Dental Staff apply to all N.H.S. hospital posts we advertise, unless otherwise stated. Canvassing disqualifies, but candidates may normally visit the hospital by appointment.

Academic and Educational

FACULTY OF ANÆSTHETISTS
ROYAL COLLEGE OF SURGEONS OF ENGLAND
BOARD OF FACULTY ELECTION

Notice is hereby given that an election of 3 Fellows and 1 Member of the Faculty into the Board will take place at the College on WEDNESDAY, 10TH MARCH, 1954, at 3.30 P.M., in the vacancies occasioned by the retirement in rotation of Dr. J. H. T. Challis, Dr. A. H. Musgrove and Dr. George Edwards, representing the Fellows, and Dr. S. A. Mason, representing the Members of the Faculty. The following shall be eligible for election to the Board on complying with the conditions of the Regulations :—

(*a*) All Fellows of the Faculty of Anæsthetists, for the 3 vacancies for Fellows on the Board.

(*b*) All Members of the Faculty of Anæsthetists, for the 1 vacancy for a Member on the Board.

Application forms of the requisite Notice to be signed by the candidate and his Nominees may be obtained on application to me, and must be received by me duly completed by 1st January, 1954.

The names of the candidates will be published in the London Gazette and the Medical Journals, on or about Friday, 15th January, 1954. A voting paper will be sent by post to each Fellow and Member, whose address is registered at the College, on Friday, 15th January, 1954. Fellows and Members are requested to give notice, without delay, of any change of address, so that their voting-papers may not be misdirected.

W. F. DAVIS, Secretary.

Lincoln's Inn-fields, London, W.C.2, 11th December, 1953.

THE INSTITUTE OF LARYNGOLOGY AND OTOLOGY
(UNIVERSITY OF LONDON)
330/332, Gray's Inn-road, London, W.C.1

COMPLETE CLINICAL COURSE (whole-time) especially suitable for D.L.O. Part II students 4TH JANUARY–11TH JUNE, 1954. Fee £31 10s.

INTENSIVE CLINICAL COURSE (whole-time) 1ST–26TH FEBRUARY, 1954. This course covers the whole field of the specialty and is intended to form a theoretical basis in preparation for practical clinical training. Fee £12 12s.

BASIC SCIENCES CLASS (whole-time) with facilities for dissection for Part I D.L.O. students 22ND FEBRUARY–28TH MAY, 1954. Fee £21.

Detailed syllabus obtainable from the Dean.

COURSE IN DISORDERS OF THE SPINE
at the
INSTITUTE OF ORTHOPÆDICS
25TH–30TH JANUARY, 1954

25th January Town Section	Lumbar disc injuries	Mr. P. H. NEWMAN
	Cervical disc injuries	Dr. P. H. SANDIFER
	Fractures of the spine	Mr. D. TREVOR
26th January Stoke Mandeville Hospital, Aylesbury	Traumatic paraplegia	Dr. L. GUTTMAN
27th January Town Section	Injuries of the cervical spine	Mr. H. J. BURROWS
	Spina bifida	Mr. T. L. CARR
	X-rays of spinal conditions including tumours	Dr. F. C. GOLDING
	Kyphosis	Mr. A. T. FRIPP
28th January Country Section	Infections of the spine other than tuberculosis	Mr. H. J. SEDDON
	Spondylolisthesis	Mr. P. H. NEWMAN
	Tuberculosis of the spine	Mr. J. A. CHOLMELEY
29th January Country Section	Scoliosis	Mr. J. I. P. JAMES
	Pott's paraplegia	Mr. H. J. SEDDON
30th January Country Section	General clinical demonstration	Mr. K. I. NISSEN

The fee for the course (including lunch and tea) is 7 guineas. Early application should be made to the Dean, at 234, Great Portland-street, W.1.

ST. BARTHOLOMEW'S HOSPITAL (MEDICAL) COLLEGE

FINAL F.R.C.S.—MAY, 1954

A COURSE of 16 CLINICAL TUTORIAL CLASSES AND DEMONSTRATIONS will be held in the Hospital on TUESDAY and THURSDAY evenings at 6.30 P.M., starting on 25TH FEBRUARY, 1954. The numbers attending will be limited. Cases, specimens and X rays will be shown and viva voce examinations conducted. The course is not comprehensive.

Fee : 20 guineas, or to Barts men 15 guineas.

Applications to the Sub-Dean, St. Bartholomew's Hospital Medical College, West Smithfield, E.C.1.

TUBERCULOSIS EDUCATIONAL INSTITUTE

SULLY HOSPITAL, GLAMORGAN

A 3-day CLINICAL COURSE for Doctors will be held at Sully Hospital, Glamorgan, on 20TH, 21ST and 22ND JANUARY, 1954. Fee £3 3s.

Applications for further information and for enrolment should be addressed to the Secretary, Tuberculosis Educational Institute, Tavistock House North, Tavistock-square, London, W.C.1.

UNIVERSITY OF SOUTHAMPTON. Sub-Department OF PHYSIOLOGY—DEPARTMENT OF ZOOLOGY. Applications are invited for the appointment of a LECTURER or ASSISTANT LECTURER IN ANIMAL PHYSIOLOGY. Salary scales : Lecturer £550–£50–£1100 ; Assistant Lecturer £450–£50–£550, plus F.S.S.U. benefit and children's allowance.

Further particulars may be obtained from the Secretary and Registrar, The University, Southampton.

L.M.S.S.A.

FINAL EXAMINATION : SURGERY, 11th January, 8th February, 8th March, 1954. MEDICINE, PATHOLOGY, 18th January, 15th February, 15th March, 1954. MIDWIFERY, 19th January, 16th February, 16th March, 1954. MASTERY OF MIDWIFERY, May and November. DIPLOMA IN INDUSTRIAL HEALTH, July and December.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

UNIVERSITY OF DURHAM. KING'S COLLEGE, NEWCASTLE UPON TYNE. DEPARTMENT OF ANÆSTHETICS. The Council of King's College invite applications for the post of FIRST ASSISTANT in the Department of Anæsthetics. The work will consist of teaching, both undergraduate and post-graduate, clinical practice and research. Applicants should be qualified anæsthetists and familiarity with investigational work and or the possession of a science degree will be an advantage. The commencing salary will be within the range of £1200 and £1700 according to qualifications and experience, with family allowance and F.S.S.U. Duties to commence as early as possible in 1954.

Applications (12 copies), together with the names and addresses of 3 persons to whom reference may be made, should be submitted within 14 days of the appearance of this advertisement to the undersigned, from whom further particulars may be obtained. G. R. HANSON, Registrar of King's College.

THE UNIVERSITY OF LIVERPOOL. Applications are invited for the post of LECTURER in the Department of Medicine. The initial salary will be not less than £900 p.a., according to qualifications and experience. The appointment will be for 1 year in the first instance.

Applications, stating age, academic qualifications and experience, together with the names of 3 referees, should be received not later than 31st December, 1953, by the undersigned, from whom further particulars of the conditions of appointment may be obtained. STANLEY DUMBELL, Registrar.

Hospital Services : Senior Appointments

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT E.N.T. SURGEON required at Hornsey Central Hospital, Park-road, N.8, for 2 half-days a week. Hospital may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 8th January, 1954.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT E.N.T. SURGEON required at Finchley Memorial Hospital, Granville-road, North Finchley, N.12, for 2 half-days a week. Hospital may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 8th January, 1954.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT GENERAL SURGEON required at Hornsey Central Hospital, Park-road, N.8, for 3 half-days a week. Hospital may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 15th January, 1954.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for appointment as :—

(1) Full or Maximum Part-time CONSULTANT RADIOLOGIST, Colchester Group of hospitals.

(2) Part-time CONSULTANT RADIOLOGIST, King George Hospital, Ilford, Essex (1 session a week), with regular duties at Ilford Isolation Hospital.

(3) Part-time CONSULTANT RADIOLOGIST, St. Mary's Hospital, Plaistow, E.13 (1 session a week), and Forest Gate Hospital, E.7 (1 session a week). Joint appointment.

Applications (6 copies), indicating post concerned and detailing private address, date of birth, qualifications and experience, present appointment(s) (including number of sessions) and grade, and names of 3 referees, should reach the Secretary, 11A, Portland-place, London, W.1, by Saturday, 26th December, 1953.

CHELMSFORD. BROOMFIELD HOSPITAL. Locum Tenens SENIOR HOSPITAL MEDICAL OFFICER required 21st December. Must have experience in pulmonary tuberculosis.

Apply Physician-Superintendent. Telephone : Broomfield 323.

EAST ANGLIAN REGIONAL HOSPITAL BOARD. ASSISTANT PSYCHIATRIST, Hellesdon Hospital, Norwich. Associated with this modern mental hospital (800 Beds) are a separate early treatment hospital including an Electro-encephalographic Department, Outpatient Clinic for both adults and children, and a special unit for the elderly mentally infirm. D.P.M. or equivalent is necessary. Salary on the scale £1300–£1750. A house is available.

Detailed applications (8 copies), including age, to Secretary of Board, 117, Chesterton-road, Cambridge, by 28th December, 1953. Candidates invited to visit Hospital by direct arrangement with Medical Superintendent.

LEEDS REGIONAL HOSPITAL BOARD invites applications from suitably qualified practitioners for the whole-time non-resident post of ASSISTANT PATHOLOGIST (Senior Hospital Medical Officer scale) for duties at hospitals in the Halifax Group. The successful candidate will work under the general guidance of the Consultant in charge of the Department and will be required to reside in Halifax or within such distance of that town as the Board may approve.

Applications (10 copies), stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, should be forwarded to the Secretary, Park-parade, Harrogate, not later than 16th January, 1954.

LEEDS REGIONAL HOSPITAL BOARD invites applications for the post of ASSISTANT CHEST PHYSICIAN (Senior Hospital Medical Officer scale) for duties at Chest Clinics in the Pontefract, Goole, and Selby Area. Adequate experience in pulmonary tuberculosis and chest radiology is essential and the successful candidate will be required to work under the direct supervision of the Senior Chest Physician for the Area. The duties will include preventive, care and aftercare work on behalf of the Local Health Authority. The person appointed will be required to reside in or near Pontefract.

Applications (15 copies), stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, should be forwarded to the Secretary, Park-parade, Harrogate, not later than 16th January, 1954.

LEEDS REGIONAL HOSPITAL BOARD invites applications for the whole-time appointment of ASSISTANT PSYCHIATRIST AND DEPUTY MEDICAL SUPERINTENDENT (Senior Hospital Medical Officer scale) at the Meanwood Park Hospital, Leeds (700 Beds). The successful candidate may, subject to the direction of the Medical Superintendent, be required to visit other hospitals in the Region in connection with the Mental Deficiency Service. Residential accommodation for a married couple will be available at the Hospital for which the necessary deductions from salary will be made. Consideration will be given to applicants who wish to be non-resident.

Applications (10 copies), stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, should be forwarded to the Secretary, Park-parade, Harrogate, not later than 16th January, 1954.

LEEDS REGIONAL HOSPITAL BOARD invites applications for the whole-time appointment of ASSISTANT PSYCHIATRIST (Senior Hospital Medical Officer scale) for duties at the Stanley Royd Hospital, Wakefield (2000 Beds), and associated clinics at Wakefield, Dewsbury, and Pontefract General Hospitals. Applicants should hold the D.P.M. or equivalent qualifications. Accommodation is available for a single person.

Applications (10 copies), stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, should be forwarded to the Secretary, Park-parade, Harrogate, not later than 16th January, 1954.

LIVERPOOL REGIONAL HOSPITAL BOARD. Deva HOSPITAL, near CHESTER. Applications are invited for the post of Whole-time ASSISTANT PSYCHIATRIST with duties at the above Hospital, including attendance at Outpatient Clinics outside the Hospital. Applicants should possess the D.P.M. or an equivalent qualification and have had reasonable experience in psychiatry, including practical knowledge of outpatient work. Married accommodation is available at a charge to be arranged. Salary £1300 (at age 32)–£50–£1750.

Forms of application from, and to be returned to, Dr. T. Lloyd Hughes, Senior Administrative Medical Officer, Liverpool Regional Hospital Board, 19, James-street, Liverpool, 2, to be received not later than 2nd January, 1954.

VINCENT COLLINGE, Secretary to the Board.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. Applications are invited for a post or posts of CONSULTANT ANÆSTHETIST. Candidates should possess a registrable qualification and either :

(i) the Diploma in Anæsthetics of the Conjoint Board and either the Degree of M.D. of a University of the British Empire, the Fellowship of the Royal College of Surgeons of England, Edinburgh or Ireland, or the Membership of the Royal College of Physicians of London, Edinburgh or Ireland ; or

(ii) the Fellowship of the Faculty of Anæsthetics of the Royal College of Surgeons.

Candidates are asked to state for how many sessions and on what days they are able to offer their services.

Applications, stating nationality, age, qualifications, and full particulars of experience and accompanied by the names of 3 persons to whom reference may be made, should reach the undersigned not later than 2nd January, 1954.

A. V. J. HINDS, Secretary.

The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the following Consultant posts at the Bolton and District Hospital Centre (Bolton Royal Infirmary, 237 Beds ; Bolton District General Hospital, 920 Beds ; &c.) :—

(*a*) Part-time GENERAL PHYSICIAN (8 notional half-days).

(*b*) Whole-time GENERAL PHYSICIAN mainly concerned with the care of the chronic sick. Appointee will be required to undertake domiciliary visits and to establish the closest liaison with General Practitioners and the local health authorities. Special interest and experience in the treatment and rehabilitation of the chronic sick is required.

Higher qualifications are essential and appointees will need to live near their main hospital. Applicants for more than 1 post should indicate their preference.

Application forms from the Senior Administrative Medical Officer to the Board at Cheetwood-road, Manchester, 8, to be returned by 21st December, 1953.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Whole-time CONSULTANT PATHOLOGIST for the Portsmouth and Isle of Wight Area Pathological Service. Candidates should have special interest in hæmatology. Consultant appointed will take charge of Hæmatology Department and Blood Bank.

Applications (5 copies), giving date of birth, qualifications, experience, names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 9th January, 1954. Applicants may visit laboratories by arrangement with Dr. E. M. DARMADY, Central Laboratory, Milton-road, Portsmouth.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires CONSULTANT ANÆSTHETIST (whole-time or 9 half-days per week). Duties at Epsom District Hospital (mainly) and at Horton, Long Grove and St. Ebba's (Mental) Hospitals, Belmont (Neurosis) Hospital and The Manor (M.D.) Hospital. Candidates must have wide anæsthetic experience and possess the D.A.

Applications (5 copies), giving date of birth, qualifications, experience, names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 9th January, 1954. Applicants may visit hospitals by local arrangement.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT E.N.T. SURGEON required at Northwood, Pinner and District Hospital, Northwood, Middlesex, for 1 half-day a week. Hospital may be visited by direct appointment.

Detailed applications including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 8th January, 1954.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT E.N.T. SURGEON required at Ashford Hospital, Ashford, Middlesex (562 Beds), for 5 half-days a week. Hospital may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 8th January, 1954.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT NEUROLOGIST required at Mount Vernon Hospital, Northwood, Middlesex, for 1 half-day a week. This is a general hospital of 426 staffed beds, is an important Centre for Radiotherapy, and has a Plastic Surgery Unit. Hospital may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland place, W.1, by 15th January, 1954.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of Whole time CONSULTANT PÆDIATRICIAN at the Royal Hospital for Sick Children, Glasgow, with duties elsewhere in the Region as may be arranged. This appointment is subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, not later than 30 days after the publication of this advertisement.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT (single accommodation only) or NON-RESIDENT SENIOR CASUALTY OFFICER at the Beckett Hospital, Barnsley. Salary within the range of £1300–£1750. Tenure for a period not exceeding 4 years.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 2nd January, 1954.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time ASSISTANT OPHTHALMOLOGIST (salary scale £1300–£50–£1750) with duties at Chesterfield Royal Hospital and associated school ophthalmic clinics. Additional duties at Mansfield.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 2nd January, 1954.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SENIOR ASSISTANT PSYCHIATRIST required for the Saxondale Hospital, Radcliffe-on-Trent. A house is available. Salary £1300–£50–£1750.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, 10. Forms to be returned by 2nd January, 1954.

SHEFFIELD REGIONAL HOSPITAL BOARD/UNITED SHEFFIELD HOSPITALS. Maximum Part-time CONSULTANT ANÆSTHETIST required to undertake 5 notional half-days per week for the Sheffield Regional Hospital Board and 4 notional half-days per week in the United Sheffield Hospitals. Regional Board duties at Rotherham and Mexborough.

Applications to the Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, from whom application forms and full details may be obtained. Completed forms to be returned by 2nd January, 1954.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SENIOR ASSISTANT PSYCHIATRIST required for the Kingsway Hospital, Derby. A house is available on the Hospital estate. Salary £1300–£50–£1750.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 2nd January, 1954.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time ASSISTANT ORTHOPÆDIC SURGEON for the London Road Hospital, Boston. Salary £1300–£50–£1750.

Application forms and further details obtainable from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 9th January, 1953.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time Locum ANÆSTHETIST required for at least 1 month in the Derbyshire area with duties mainly at the Derbyshire Royal Infirmary. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs.

Apply to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, naming 2 referees.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time Locum ANÆSTHETIST required for the Grimsby Group of hospitals from 1st February, 1954. Salary at the rate of 31½ guineas per week.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, naming 2 referees.

SOUTH AFRICA. PROVINCIAL ADMINISTRATION OF THE CAPE OF GOOD HOPE. UNIVERSITY OF CAPE TOWN: Joint Medical Staff for Groote Schuur and other Teaching Hospitals. Vacancies:

1. Applications are invited from suitably qualified applicants (South African citizens who are registered with the South African Medical and Dental Council) for appointment to the following vacant posts in the Hospital Board Service:—

1 post of MEDICAL PRACTITIONER (grade G), Department of Medicine. Salary at the rate of £2000 p.a. (fixed).

1 post of MEDICAL PRACTITIONER (grade E), Department of E.N.T. Salary at the rate of £1600 p.a. (fixed).

2. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

3. In addition to the salary indicated, cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees. The present rate is £320 p.a. for married persons and £100 p.a. for single persons.

4. The successful applicants will be appointed to the Joint Medical Staff and required to serve jointly the Provincial Administration of the Cape of Good Hope and the University of Cape Town.

5. Candidates are required to have not less than 3 years experience after registration as a specialist in the specialty in which the vacancy exists.

6. The successful applicants will be required to submit satisfactory birth and health certificates and their appointment will be subject to the following conditions:—

(*a*) The persons appointed will be required to serve 1 years probationary period after which the appointment will be made permanent provided they have passed an examination in Afrikaans as second language; which examination shall not be lower than the standard required for the Junior Certificate Examination of the Department of Education of this Province, and, provided further, that their services and conduct during the period of probation are satisfactory and their state of health is such as will enable them to continue to discharge efficiently all the duties of the post in which they will be employed.

(*b*) Transport expenses (third class by rail overseas and second or cabin class steamship fare and first class by rail in the Union) necessarily incurred by the successful applicants from place of residence to the place of assumption of duty in South Africa, will be defrayed by the Administration.

(*c*) Should the successful applicants relinquish their posts during the probationary period of 1 year, they will be required to refund to the Administration the pro rata amount in respect of their transport expenses.

7. Application must be made on the prescribed form, Staff 23, which is obtainable from the Staff Clerk, Room 102, South Africa House, Trafalgar-square, London, W.C.2, to whom the completed application forms must be returned to reach him not later than 21st December, 1953.

8. Candidates must state the earliest date on which they can assume duty.

AUSTRALIA. THE ROYAL MELBOURNE HOSPITAL, PARKVILLE, N.2, VICTORIA, AUSTRALIA. Applications are invited from legally qualified medical practitioners for the position of ASSISTANT DIRECTOR OF ANÆSTHESIA. This is a new full-time appointment and is non-resident. Applicants should possess a Diploma of Anæsthesia or its recognised equivalent; extensive clinical experience in modern anæsthetic methods and preferably overseas experience with an interest in and capacity for research, for which ample facilities are available. Commencing salary £2000 p.a. Right of private practice is not granted.

Applications on the prescribed form will close with the Manager on 23rd January, 1954.

NEW ZEALAND. THE OTAGO HOSPITAL BOARD. DUNEDIN HOSPITAL, NEW ZEALAND. Applications are invited for the position of MEDICAL SUPERINTENDENT, Otago Hospital Board. Present salary is at the rate £1940–£2190 p.a. General conditions of appointment will be in accordance with the Hospital Employment (Medical Officer Regulations, 1952, Amendment Number 1). On condition that the appointee enters a contract for 2 years service, travelling expenses will be paid as follows:

(*a*) Up to £120 each for Steamer fares actually incurred by the appointee, his wife and dependent children.

(*b*) The cost of transporting excess baggage and light personal effects only from the place of residence to the port of arrival in New Zealand, not exceeding £50 for a married man and £25 for single appointee.

(*c*) Actual reasonable travelling expenses incurred in travelling to the port of embarkation.

The successful applicant will, as a condition of accepting the payment of transport expenses, be required to enter into an undertaking to remain in the employ of the Board for 2 years. Further information in regard to this appointment may be obtained from THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2, and the High Commissioner's Office, 415, Strand, London, W.C.2.

Applications, stating age, qualifications and experience, with testimonials, health and radiological certificates, will be received by the undersigned up till NOON on Friday, 15th January, 1954. United Kingdom applicants must have a copy of their application endorsed "Medical Superintendent, Otago Hospital Board," with the High Commissioner for New Zealand, 415, Strand, London, on or before 15th January, 1954.

W. A. WILLIAMSON, Esq., Secretary.
Otago Hospital Board, P.O. Box 946, Dunedin, New Zealand.

Hospital Services: Junior Appointments

ACTON HOSPITAL, Gunnersbury-lane, W.3. Senior HOUSE OFFICER (casualty) required. Resident post. Salary £670 p.a., less £100 p.a. for residence. Post vacant 13th January, 1954.

Applications, with names of 2 referees, to Hospital Secretary by 19th December, 1953.

ACTON HOSPITAL, Gunnersbury-lane, W.3. Resident HOUSE OFFICER required for 6 months from 27th December, 1953. Responsibility for both medical and surgical beds. Salary £350–£450 p.a., less £100 for residence.

Applications to Hospital Secretary with copies of 2 recent testimonials, by 19th December, 1953.

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. RESIDENT SURGICAL OFFICER (Junior Hospital Medical Officer grade) required immediately.

Apply Hospital Secretary (L), enclosing copies of 2 recent testimonials.

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. HOUSE PHYSICIAN (resident), vacant early January, 1954.

Apply Hospital Secretary (L), enclosing copies of 2 recent testimonials.

BETHNAL GREEN HOSPITAL, Cambridge Heath-road, London, E.2. (General—313 Beds.) Applications are invited from registered medical practitioners for the posts of 2 HOUSE PHYSICIANS. Salaries £350, £400, or £450 p.a. depending on experience, less £100 p.a. residential charges.

Applications, stating age, nationality, qualifications, and experience, with copies of 3 testimonials, to the Hospital Secretary immediately.

BETHNAL GREEN HOSPITAL, Cambridge Heath-road, London, E.2. (General—313 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE SURGEON (gynæcology and obstetrics). The appointment is for 6 months and the salary £350, £400, or £450 according to experience, less residential charges. The Hospital is recognised for the Final F.R.C.S. (Eng.).

Applications, stating age, nationality, qualifications, and experience, with copies of 2 recent testimonials, to the Hospital Secretary without delay.

CITY OF LONDON MATERNITY HOSPITAL, Hanley-road, London, N.4. OBSTETRIC HOUSE SURGEON required 18th January, 1954, recognised for M.R.C.O.G.

Application forms obtainable from, and returnable to, Hospital Secretary, with copies of 3 testimonials by 31st December, 1953.

CONNAUGHT HOSPITAL, Walthamstow, E.17. (118 Beds.) Applications are invited for the post of RESIDENT ANÆSTHETIST graded as Senior House Officer, vacant 26th January, 1954. Salary £670 p.a., less £120 p.a. for board, lodging, &c. Recognised for D.A. and F.F.A.R.C.S.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials should be sent immediately to the Secretary, Hospital Management Committee, Forest Group, Langthorne-road, E.11.

DREADNOUGHT SEAMEN'S HOSPITAL, Greenwich, London, S.E.10. (General Hospital of 147 Beds.) HOUSE PHYSICIAN (pre-registration post) required from 7th January.

Applications, stating age, qualifications and experience, with the names of 3 recent referees, should reach the undersigned on or before 19th December. F. A. LYON, Secretary.

Dreadnought Hospital, Greenwich, S.E.10.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston-road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from registered Women medical practitioners for the post of JUNIOR RESIDENT ASSISTANT PATHOLOGIST. Salary in accordance with the Ministry of Health scale for House Officers. The appointment is for 6 months in the first instance, duties to commence 1st January, 1954.

Applications, with copies of 3 recent testimonials, should be sent to the Secretary, Elizabeth Garrett Anderson Hospital, as soon as possible.

GERMAN HOSPITAL, Dalston, E.8. (General.) Applications are invited for a HOUSE SURGEON (pre-registration) appointment, vacant 1st January for 6 months, and should reach Group Secretary, Hackney Hospital Management Committee, London, E.9, by 18th December, quoting reference GH HS.

HACKNEY HOSPITAL, London, E.9. (General—807 Beds.) CASUALTY HOUSE OFFICER (6 months appointment) required, to act also as House Officer to the E.N.T Department.

Applications from second or third post candidates should reach the Group Secretary, Hackney Hospital Management Committee, London, E.9, as soon as possible.

HAMMERSMITH HOSPITAL AND INSTITUTE OF OBSTETRICS AND GYNÆCOLOGY, Ducane-road, London, W.12. Whole-time SENIOR REGISTRAR (obstetrics and gynæcology), required as soon as possible.

Applications, stating age, qualifications, experience, names of 2 referees, to Secretary, Board of Governors, by 28th December.

HAMMERSMITH HOSPITAL AND INSTITUTE OF OBSTETRICS AND GYNÆCOLOGY, Ducane-road, London, W.12. HOUSE OFFICER (gynæcology) required 1st March. Post recognised for M.R.C.O.G. and D.Obst.R.C.O.G.

Applications, stating age, qualifications, experience, copies of 2 recent testimonials, to Secretary, Board of Governors, by 31st December.

LONDON HOSPITAL, Whitechapel, E.1. Applications are invited for the post of SENIOR HOUSE OFFICER to the Radiodiagnostic Department. The post becomes vacant on 1st February, 1954.

Applications (6 copies), together with 6 copies of 3 recent testimonials, should reach the House Governor by 1st January, 1954. H. BRIERLEY, House Governor.

LONDON HOSPITAL, Whitechapel, E.1, invites applications for the post of REGISTRAR in General Surgery. The post becomes vacant on 10th February, 1954.

Applications (12 copies), giving the names and addresses of 3 referees, should reach the House Governor by 1st January, 1954. H. BRIERLEY, House Governor.

LONDON HOSPITAL, Whitechapel, E.1. Applications are invited for the post of SENIOR HOUSE OFFICER to Surgical Outpatient Department becoming vacant on 1st February, 1954.

Applications (6 copies), together with 6 copies of 3 recent testimonials, should be received by the House Governor by 1st January, 1954. H. BRIERLEY, House Governor.

LONDON CHEST HOSPITAL. Hospitals for Diseases OF THE CHEST. 2 vacancies occur 1st February, 1954, for RESIDENT HOUSE PHYSICIAN. Appointments for 6 months, 4 in London, 2 at the Country Branch, near Letchworth, and posts are graded as House Officer. Duties include work in the Outpatient Department and Refill Clinic as well as in wards.

Applications, stating age, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach the undersigned not later than 21st December.

THOMAS BROWN, House Governor.

London Chest Hospital, E.2.

LONDON CHEST HOSPITAL. Hospitals for Diseases OF THE CHEST. A vacancy occurs 1st February, 1954, for RESIDENT SURGICAL OFFICER. Appointment for 6 months, with prospect of renewal, of which 2 will be at the Country Branch, near Letchworth. Post graded as Senior House Officer or Registrar, according to qualifications and experience. Previous surgical experience necessary.

Applications, stating age, qualifications with dates, and previous appointments held, with copies of 3 testimonials, should reach the undersigned not later than 21st December.

THOMAS BROWN, House Governor.

London Chest Hospital, E.2.

KING EDWARD MEMORIAL HOSPITAL, Ealing. SOUTH WEST MIDDLESEX HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER to Orthopædic, Casualty and Fracture Departments. Recognised for F.R.C.S.

Applications, stating age, nationality, qualifications, dates and details of experience, together with copies of 2 recent testimonials, to Group Secretary, West Middlesex Hospital, Isleworth, Middlesex. Closing date 22nd December, 1953.

MILDMAY MISSION HOSPITAL, Austin-street, Bethnal Green, E.2. Applications are invited for the pre-registration post of HOUSE PHYSICIAN (resident), vacant on 1st February, 1954. Candidates should be in full sympathy with the evangelistic aims of the Hospital.

Applications and references to be addressed to the Medical Superintendent.

MILDMAY MISSION HOSPITAL, Austin-street, Bethnal Green, E.2. Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER (resident). Recognised for the F.R.C.S. Vacant 1st January, 1954. The appointment is for 1 year. Salary £670 p.a., less £130 p.a. for board, &c. Candidates should be in full sympathy with the evangelistic aims of the Hospital.

Applications and references to be addressed to the Medical Superintendent.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. CLINICAL ASSISTANT for E.N.T. Department required. Appointment will be on a part-time basis, with attendance for 4 sessions weekly. Candidates must have had considerable experience in the specialty, including audiometry and hearing-aid work. Salary £175 p.a. per weekly half-day.

Applications, stating age, qualifications, experience, nationality, with recent testimonials and names of 2 referees, to Secretary of Hospital, by 28th December.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. PÆDIATRIC HOUSE OFFICER (resident) required for 1st February, 1954, for 6 months. Post recognised for D.C.H.

Applications, stating age, qualifications, experience, nationality, with copies of recent testimonials, to Secretary of Hospital, by 21st December.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. OBSTETRICAL AND GYNÆCOLOGICAL HOUSE SURGEON (resident), required for 1st February, 1954, for 6 months. Recognised for second pre-registration post, but registered medical practitioners may apply. Candidates must have held house appointment in either medicine or surgery. Large Obstetric and Gynæcological Department. Recognised by the R.C.O.G. for Diploma, and as a combined post for Membership.

Applications, stating age, qualifications, experience, nationality, with copies of recent testimonials, to Secretary of Hospital, by 21st December.

NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W.1. Applications are invited for the post of RESIDENT CASUALTY OFFICER (Senior House Officer), commencing 20th January, 1954.

Applications, stating age, qualifications, experience, together with the names and addresses of 2 referees, to reach the Hospital Secretary by 31st December, 1953.

NATIONAL TEMPERANCE HOSPITAL, Hampstead-road, N.W.1. Applications are invited for the posts of 2 HOUSE SURGEONS (general), commencing 20th January, 1954. 1 vacancy is a recognised pre-registration post and preference will be given to pre-registration candidates.

Applications, stating age, qualifications, experience, together with the names and addresses of 2 referees, to reach the Hospital Secretary by 31st December, 1953.

PADDINGTON GENERAL HOSPITAL, Harrow-road, W.9. Applications are invited for the post of HOUSE SURGEON (anæsthetics). Recognised for D.A.

Submit application stating age, qualifications and experience, together with the names and addresses fo 2 referees, to the Hospital Secretary immediately.

PRINCE OF WALES'S GENERAL HOSPITAL. (219 Beds.) TOTTENHAM GROUP HOSPITAL MANAGEMENT COMMITTEE (GROUP 4), The Green, N.15. Applications are invited from registered medical practitioners for the appointment of RESIDENT HOUSE SURGEON to Orthopædic, Fracture and Traumatic Department, E.N.T. Department, and SENIOR CASUALTY OFFICER (second or third post) for a period of 6 months, vacant 8th January, 1954.

Application form from Secretary, to be returned by 28th December, 1953.

ROYAL FREE HOSPITAL. Applications are invited for the post of SENIOR RESIDENT ANÆSTHETIST. Applicants must be registered medical practitioners of not more than 10 years standing. The appointment is for 6 months from 1st March, 1954, with duties at North Western Branch and Hampstead General Hospital. Salary in accordance with the Ministry of Health scale for Senior House Officers.

Application forms may be obtained from the Secretary to the Board of Governors, the Royal Free Hospital, Gray's Inn-road, London, W.C.1, to whom they should be returned not later than 30th December, 1953.

ROYAL FREE HOSPITAL. Applications are invited for the post of JUNIOR RESIDENT ANÆSTHETIST. Applicants must be registered medical practitioners of not more than 10 years standing. The appointment is for 6 months, duties to commence 1st March, 1954. Salary in accordance with the Ministry of Health scale for House Officers.

Application forms may be obtained from the Secretary to the Board of Governors, the Royal Free Hospital, Gray's Inn-road, London, W.C.1, to whom they should be returned not later than 30th December, 1953.

ROYAL FREE HOSPITAL. Applications are invited for the posts of RESIDENT MEDICAL OFFICERS at the North Western and Liverpool Road Branches in the above Group. Duties to commence 1st February, 1954, appointment for 1 year. Salary and conditions of service in accordance with those laid down by the Ministry of Health for Junior Hospital Medical Officers. Candidates should be registered medical practitioners of not more than 10 years standing.

Application forms may be obtained from the Secretary, the Royal Free Hospital, Gray's Inn-road, W.C.1, to whom they should be returned not later than 30th December, 1953.

ROYAL NATIONAL THROAT, NOSE AND EAR HOS-PITAL, Gray's Inn-road, W.C.1, and Golden-square, W.1. Applications are invited for a post of SENIOR REGISTRAR with effect from 1st March, 1954. The appointment will be for an initial period of 1 year, subject to annual re-election thereafter to a maximum of 4 years and otherwise in accordance with the terms and conditions of service in the National Health Service. Applicants must have had considerable experience in general surgery and in this specialty and hold a higher surgical qualification.

Applications should give full information as to qualifications and experience, the names of 2 referees, and should be sent in duplicate to the House Governor before 30th January.

ROYAL NATIONAL THROAT, NOSE AND EAR HOS-PITAL, Gray's Inn-road, London, W.C.1. and Golden-square, W.1. There will be a vacancy for an ANÆSTHETIC REGISTRAR (resident or non-resident) as from 1st January, 1954, to work as required at both hospitals. Applicants should have had some special experience in anæsthesia and preferably should hold the D.A. or be working for that Diploma. Registrar grading and salary in accordance with the terms and conditions of service under the National Health Service Act.

Applications, giving full particulars of age, qualifications, and experience, with the names of 2 referees, should be sent to the House Governor immediately.

ROYAL NATIONAL THROAT, NOSE AND EAR HOS-PITAL, Gray's Inn-road, London, W.C.1, and Golden-square, W.1. RESIDENT HOUSE SURGEON (second or subsequent post). There will be a vacancy on 1st January, 1954. 6 months appointment, with salary as laid down for House Officer grades in the terms and conditions of service under the National Health Service.

Applications, stating age, qualifications, full details of previous experience (particularly in this specialty) with copies of 1–3 recent testimonials, should be sent to the House Governor by 19th December, 1953.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Applications are invited from registered medical practitioners for the post of HOUSE SURGEON (resident). Salary £400–£450 p.a., according to experience. The post is tenable for 6 months as from 1st February, 1954.

Forms of application are obtainable from the House Governor to whom applications (together with copies of 3 recent testimonials) should be sent not later than 23rd December.

ST. OLAVE'S HOSPITAL, Lower-road, Rotherhithe, S.E.16. SENIOR HOUSE OFFICER (anæsthetics), resident, required at above Hospital.

Applications to the Surgeon-Superintendent at the above address.

ST. FRANCIS' HOSPITAL, Constance-road, East Dulwich, S.E.22. (398 chronic sick.) CAMBERWELL HOSPITALS MANAGEMENT COMMITTEE. Applications invited for appointment as SENIOR HOUSE OFFICER (medical duties). Position vacant from 1st January, 1954. Salary £670 a year, with deduction at rate of £150 a year in respect of residence.

Applications, stating age, qualifications and experience, enclosing copy testimonials, to the Group Secretary, Dulwich Hospital, S.E.22, as soon as possible.

ST. LEONARD'S HOSPITAL, Nuttall-street, London, N.1. (Acute—182 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE SURGEON. The appointment is for 6 months at a salary of £350–£450 according to experience, and subject to a reduction for residential charges.

Applications, giving the names of 2 referees, to be forwarded to the Hospital Secretary by 26th December, 1953.

ST. LEONARD'S HOSPITAL, Nuttall-street, London, N.1. (Acute—182 Beds.) Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER (Casualty Officer). The appointment is for 12 months at a salary of £670, subject to a reduction for residential charges. The post is recognised for the Final F.R.C.S.

Applications, with names of 2 referees, to the Hospital Secretary, by 19th December, 1953.

ST. GEORGE'S HOSPITAL, S.W.1. Applications are invited for the post of HOUSE PHYSICIAN (resident) at the Victoria Hospital for Children for 6 months with effect from 1st March, 1954. Applicants should preferably have held at least 1 post as House Officer.

Applications, giving details of age, education, experience, and the names of 2 referees, should reach the undersigned not later than 5th January, 1954. P. H. CONSTABLE, House Governor.

ST. GEORGE'S HOSPITAL, S.W.1. Applications are invited for the post of REGISTRAR in the Department of Psychiatry. The inpatient work of the Department is at the Atkinson Morley's Hospital, and the outpatient work at St. George's. The appointment is for 1 year in the first instance, with effect from 16th February, 1954.

Applications, giving details of age, education, experience, and the names of 2 referees, should reach the undersigned not later than 5th January, 1954. P. H. CONSTABLE, House Governor.

ST. GEORGE'S HOSPITAL, S.W.1. Applications are invited for the post of RESIDENT ASSISTANT CLINICAL PATHOLOGIST in the grade of Senior House Officer. Previous experience in laboratory work is not essential, but applicants should have held a clinical appointment. The appointment is for 1 year, with effect from 15th February, 1954.

Applications, giving details of age, education, previous experience, and the names of 2 referees, should be addressed to the undersigned and received not later than 5th January, 1954.

P. H. CONSTABLE, House Governor.

ST. MARY'S HOSPITAL, Paddington, W.2, and The NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD. SENIOR REGISTRAR in General Surgery required for a combined appointment which will normally be for a period of 4 years —namely, first and fourth years at St. Mary's Hospital; second and third years at Ashford Hospital. Possession of higher surgical qualification essential. Hospitals may be visited by direct appointment. The successful candidate will be required to take up his duties as soon as possible.

Applications, stating nationality, date of birth, permanent address, qualifications with dates, and details of previous and present appointments, together with the names and addresses of 3 referees, should reach ALAN POWDITCH, House Governor, not later than 2nd January, 1954.

ST. NICHOLAS HOSPITAL, Plumstead, London, S.E.18. CASUALTY OFFICER (recognised for F.R.C.S.). vacant end of December. 6 months appointment. Salary £350–£450 p.a., according to experience, less £100 p.a. for residence.

Apply to Group Secretary, Memorial Hospital, Woolwich, S.E.18.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. There is a vacancy for a Part-time SURGICAL REGISTRAR, attending 2 sessions per week. The appointment is graded as that of a Senior Registrar.

Full particulars and form of application, which must be returned not later than Monday, 11th January, 1954, are obtainable from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.1. Applications are invited for the post of SENIOR HOUSE OFFICER (non-resident) in the Anæsthetic Department from 11th January, 1954.

Applications, with names of 2 referees, to Administrator and Secretary, by 23rd December, 1953.

WANSTEAD HOSPITAL, Wanstead, E.11. Applications are invited for the post, now vacant, of CASUALTY OFFICER (graded as Senior House Officer). Salary £670 p.a., with a deduction of £120 p.a. for board, lodging, &c.

Applications, giving full particulars, together with copies of 2 recent testimonials, should be sent immediately to the Secretary Forest Group Hospital Management Committee, Langthorne-road, E.11.

WEST LONDON HOSPITAL, Hammersmith-road, London, W.6. 2 HOUSE PHYSICIANS (general medicine) required 1st February.

Applications, stating age, qualifications, experience, copies of 2 recent testimonials, to Secretary by 19th December.

WESTMINSTER CHILDREN'S HOSPITAL. WESTMINSTER HOSPITAL TEACHING GROUP. CASUALTY OFFICER required for 6 months from 1st January, 1954. Grade—House Officer (post-registration) or Senior House Officer, dependent on experience.

Apply, with copies of testimonials, to Secretary, Westminster Children's Hospital, Vincent-square, S.W.1, by 17th December, 1953.

WHIPPS CROSS HOSPITAL. Leytonstone (No. 10) HOSPITAL GROUP. Applications are invited for the resident post of SENIOR HOUSE OFFICER in Pathology at above Hospital which falls due on 8th February, 1954.

Application forms obtainable from the Hospital Secretary, Whipps Cross Hospital, Whipps Cross-road, E.11, to be returned by 23rd December, 1953.

WHITTINGTON HOSPITAL, N.19. Registrar (whole-time) required for E.N.T. Department (30 Beds.) Post recognised for F.R.C.S. and D.L.O. Vacant 1st February, 1954. Considerable experience in laryngology desirable as the post is a responsible one. Department takes part in postgraduate teaching. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Archway Group, Hospital Management Committee, 46, Cholmeley-park, N.6, by 31st December, 1953.

ASHFORD HOSPITAL, Ashford, Kent. Applications are invited for the appointment of SENIOR HOUSE SURGEON at the above Hospital. Applicants should have held at least 3 hospital posts. The appointment will be tenable for a year. Salary £670 a year, less a deduction of £150 a year for residential emoluments.

Applications, stating age, qualifications and the names and addresses of 2 referees, should be made to the Group Secretary, "Ash-Eton," Radnor Park West, Folkestone.

AYLESBURY. ROYAL BUCKINGHAMSHIRE AND ASSOCIATED HOSPITALS MANAGEMENT COMMITTEE, AYLESBURY, BUCKS. Applications are invited for the post of SENIOR HOUSE OFFICER (anæsthetics) to the Department of Anæsthetics for the Aylesbury Group of hospitals. The appointment is recognised under the D.A. regulations and application has been made to the Faculty of Anæsthetists for recognition under the conditions for the F.F.A.R.C.S. examination. Post vacant now. Salary £670 p.a., with a deduction of £140 p.a. if resident.

Applications, giving full details of experience and 2 names for reference, should be forwarded to the Secretary to the Management Committee, 9, Bicester-road, Aylesbury.

Applications are invited for the following appointments :—

Royal Buckinghamshire Hospital

SENIOR HOUSE OFFICER for Accident and Orthopædic Department vacant 17th January. Duties include charge of Casualty Department together with those of Senior Resident. Salary £670 p.a., less £140 p.a. for residence, &c.

SENIOR HOUSE OFFICER for Accident and Orthopædic Department, which is centred on this Hospital and comprises 48 Beds, vacant now.

Both posts are recognised for F.R.C.S.

Applications, with 2 testimonials, to Secretary-Superintendent as soon as possible.

Stoke Mandeville Hospital

HOUSE PHYSICIAN (Senior Resident Medical Officer) for the Acute General Medical Unit, which comprises 2 Registrars and 3 Resident House Physicians. The post is of Senior House Officer grade. Vacant 23rd January, 1954.

Applications with copies of 3 recent testimonials to the Administrative Officer.

RESIDENT HOUSE PHYSICIAN for Medical Department (96 Beds), vacant 10th January, 1954. Recognised pre-registration post, but applications from registered practitioners will be considered.

Apply, with copies of 2 testimonials, to Administrative Officer.

Tindal General Hospital

HOUSE SURGEON (Male or Female), vacant mid-January. The post offers wide experience of general surgery with operative practice and is recognised for F.R.C.S. The acute Surgical Unit consists of 95 Beds. No casualty department.

Applications, stating age, qualifications and experience, with 2 testimonials, to Administrative Officer.

HOUSE PHYSICIAN (Chest Unit), Male or Female, vacant mid-January, 1954. Duties include care of about 20 chest cases (including T.B. Chalets) which may increase in due course and 4 clinics weekly, including refills, forming a progressive chest unit for the Aylesbury area. Instruction in bronchoscopy and bronchography given. An acute Geriatric Unit, a small long-stay Annexe, and a Medical Outpatient Clinic provide some general medicine. No casualty department. Pre-registration post but registered practitioners invited to apply.

Apply, with 2 testimonials, to the Administrative Officer as soon as possible.

St. John's Hospital, Stone, near Aylesbury, Bucks

SENIOR HOUSE OFFICER (resident) in accordance with the terms and conditions of service of the National Health Service at a salary of £670 p.a., less the usual charge for board, lodging and laundry. The Hospital is recognised for study for the D.P.M. Accommodation for a married man available.

Applications, stating age, qualifications and experience, and the names of 3 referees, should reach the Physician-Superintendent within 2 weeks of the appearance of this advertisement.

APPLEY BRIDGE, near WIGAN. WRIGHTINGTON HOSPITAL. RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER required. Regional Centre for Orthopædic Tuberculosis, 200 adults and 100 children. Salary £700 by annual increments of £50 to £1000 p.a., less £155 for residence.

Apply to Consultant Surgeon-Superintendent with 2 references or names of 2 referees.

ANGUS AND STRACATHRO AND BRECHIN HOS-PITALS BOARDS OF MANAGEMENT. Applications are invited for the appointment of JUNIOR HOSPITAL MEDICAL OFFICER to the Angus Tuberculosis Hospitals and Clinics, under the control of the Area Chest Physician, with duties at Stracathro, Noranside and Whitehills Hospitals, as required. Clinic, domiciliary and laboratory experience will also be afforded. Salary scale £700–£50 (6)–£1000 p.a. Unmarried accommodation can be provided in Stracathro Hospital, but the Officer appointed may live out, if desired.

Applications, naming 3 referees, should be addressed to the Medical Superintendent, Arbroath Infirmary, Angus, to reach him within a fortnight of the appearance of this notice.

BARKING HOSPITAL (Maternity), Upney-lane, Barking. There will be a vacancy for a RESIDENT SENIOR HOUSE OFFICER at the above Hospital on 24th December, 1953. Salary being £670 p.a., less emoluments valued at the rate of £150 p.a. Applicants should have been qualified not less than 1 year. Duties will include antenatal work.

Applications, accompanied by copies of testimonials, should be sent to the undersigned within 7 days of the appearance of this advertisement.

H. F. HARRIS, Deputy Secretary,
Ilford and Barking Group Hospital Management Committee.
King George Hospital, Ilford.

BARNSTAPLE. NORTH DEVON INFIRMARY. (110 Beds.) HOUSE SURGEON (pre-registration). Post vacant mid-February.

Applications to Group Secretary, North Devon Hospital Management Committee, 19, Alexandra-road, Barnstaple.

BATH CLINICAL AREA. South-Western Regional HOSPITAL BOARD. Applications are invited from registered medical practitioners in general practice for the appointment of CLINICAL ASSISTANT in General Medicine to undertake 1 weekly session at the Royal United Hospital, Bath. The successful applicant will work under the general direction of the Consultant Physicians attached to the Bath Hospitals Group. Previous experience in general medicine is desirable. Payment will be at the rate of £175 p.a. per weekly 3½-hour session. The appointment will be held for 1 year.

Applications, stating date of birth, qualifications and experience, together with the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 2nd January, 1954.

BEDFORD GENERAL HOSPITAL. (435 Beds.) 2 RESIDENT HOUSE SURGEONS required (pre-registration posts) on 18th and 27th January, 1954. The appointments offer exceptional opportunities for general experience in a busy acute Surgical Unit.

Applications, stating age, nationality, qualifications, previous appointments, together with copies of 2 testimonials, should be forwarded to Group Secretary, Bedford Group Hospital Management Committee, 3, Kimbolton-road, Bedford.

BIRMINGHAM REGIONAL HOSPITAL BOARD.

(*a*) **North Staffordshire Royal Infirmary** (475 Beds) Whole-time REGISTRAR in E.N.T. Surgery. Experience specialty essential. Resident or non-resident.

(*b*) **Shrewsbury Group of hospitals** Whole-time REGISTRAR in E.N.T. Surgery. Duties at E.N.T. Hospital, Shrewsbury (68 Beds), Copthorne Hospital (168 Beds). Considerable experience specialty an advantage. Resident or non-resident.

(*c*) **Stafford, St. George's Hospital** (1334 Beds) Whole-time REGISTRAR in Psychiatry. Single or married accommodation available. Experience specialty essential. Possession of higher qualification an advantage. Recognised for D.P.M.

(*d*) **Stoke-on-Trent, City General Hospital** (966 Beds) Whole-time REGISTRAR in Psychiatry. Department comprises mental observation ward (500 admissions a year), 150 beds for chronic psychotics and mental defectives. Opportunity to study all aspects of adult psychiatry. Outpatient Department (4 sessions weekly), including E.C.T. Recognised for D.P.M.

(*e*) **Malvern Wells, St. Wulstan's Hospital** (258 Beds) Whole-time SENIOR REGISTRAR in Tuberculosis. Experience specialty essential. Resident. Successful candidate may subsequently be required to spend not more than 2 years in a selected hospital of the United Birmingham Hospitals in accordance with the arrangements for the interchange of Registrars agreed between the 2 Boards.

Application forms from Secretary, 10, Augustus-road, Birmingham, 15, to be returned before 28th December, 1953. Candidates may visit hospitals.

BIRMINGHAM, 18. DUDLEY ROAD HOSPITAL. (800 Beds.)

2 HOUSE PHYSICIANS (Pædiatric Department). 1 post recognised for pre-registration. The Department, under the direction of 2 Consultant Pædiatricians, consists of 113 pædiatric beds or cots and 100 neonatal cots. Posts are recognised for D.C.H., facilities being given for postgraduate instruction and necessary attendance at clinics. Undergraduates of the University of Birmingham attend the department for clinical instruction. Vacant on 21st January and 1st May, 1954.

Detailed applications, with copies of 3 recent testimonials, to the Secretary.

HOUSE SURGEONS recognised for pre-registration. 2 appointments vacant on 18th January and 1st February, 1954. The appointments are each under the control of 2 Consultant Surgeons and are approved resident posts for the Final F.R.C.S. (Eng.).

Detailed applications, with copies of 3 recent testimonials, to the Secretary.

SENIOR HOUSE PHYSICIAN. Applications are invited for above resident post in Unit of General Medicine and combined with duties with thoracic surgical cases. Post vacant on 1st February, 1954, and will provide good experience in general medicine and in investigation and treatment of non-tuberculous thoracic diseases. Tenable for 6 months or 1 year.

Detailed applications, with copies of recent testimonials, to the Secretary.

BIRMINGHAM. SOLIHULL HOSPITAL, Lode-lane, SOLIHULL. RESIDENT SURGICAL OFFICER (Senior House Officer). Post vacant December. Good experience in general surgery and 5 other resident medical staff.

Applications, stating age, nationality, qualifications, and experience, together with copies of testimonials or names of referees, to the Medical Superintendent.

BIRMINGHAM. SOLIHULL HOSPITAL, Lode-lane, SOLIHULL. HOUSE SURGEON (pre-registration post) required. Post vacant end of December. General Hospital and offers good experience. 5 other Resident Medical Staff.

Applications immediately, giving age, qualifications, nationality, and experience, with copies of 2 recent testimonials or names of referees, to the Medical Superintendent.

BIRMINGHAM ACCIDENT HOSPITAL, Bath-row, BIRMINGHAM, 15. (215 Beds.) HOUSE SURGEONS (Male or Female). 2 posts vacant in February, 1 post vacant in March. Recognised for F.R.C.S. The appointments will be for a period of 6 months of which 2 may be spent in the Burns Unit (Medical Research Council). The Hospital is the largest Traumatic Unit in the country, and treats 50,000 new patients each year. Posts are open to registered practitioners and offer ample opportunity for practical experience in the management of all types of injury and teaching by the Consultant staff.

Applications, with copies of recent testimonials or names of 2 referees, to the Administrator.

BIDEFORD AND DISTRICT HOSPITAL. (51 Beds.) HOUSE OFFICER required. Flat available for married Officer.

Applications to Group Secretary, North Devon Hospital Management Committee, 19, Alexandra-road, Barnstaple.

BLACKBURN AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (anæsthetics) required. Residence, and duties mainly, at Queen's Park Hospital, Blackburn, with sessions at the Blackburn Royal Infirmary and Accrington Victoria Hospital as arranged by the Consultant Anæsthetist. Post recognised for D.A. and F.F.A.R.C.S.

Apply to the Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

BLACKPOOL. VICTORIA HOSPITAL. (344 Beds.)

(1) SENIOR HOUSE OFFICER (anæsthetics). Recognised for D.A.

(2) SENIOR HOUSE OFFICER (Orthopædic and Casualty Department). Post vacant 19th January, 1954. Recognised for the F.R.C.S.

(3) SENIOR HOUSE OFFICER (E.N.T. Department). Recognised for D.L.O. and F.R.C.S.

(4) HOUSE OFFICER (E.N.T. Department). Recognised for D.L.O.

(5) RESIDENT HOUSE SURGEON with main duties in the Casualty and Orthopædic Departments. Recognised for the F.R.C.S.

(6) RESIDENT HOUSE SURGEONS (Surgical Department). 2 posts; 1 now vacant; 1 vacant 15th February, 1954. Recognised for F.R.C.S.

This is a busy general hospital with a large Outpatient Department and the posts offer excellent opportunities for experience under Consultant staff.

Applications with references to the Hospital Secretary.

BOLTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. RESIDENT HOUSE SURGEON for general surgical duties. Tenable for 6 months and recognised under the Pre-registration Service scheme.

Applications, stating age, nationality, qualifications and experience, and the names of 2 referees, should be sent immediately to H. P. TRAVIS Group Secretary.

The Royal Infirmary, Bolton.

BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. ROYAL VICTORIA HOSPITAL, WESTBOURNE, HANTS. Applications are invited for the appointment of HOUSE SURGEON for E.N.T. and ophthalmic duties. In addition to duties at the above Hospital, the successful applicant will be required to assist in the E.N.T. Outpatient Clinics at the Royal Victoria Hospital, Shelley-road, Bournemouth, and at Poole General Hospital, Poole. The appointment is recognised for the D.O. and D.L.O. Diplomas.

Applications to the Deputy Hospital Secretary, Royal Victoria Hospital, Shelley-road, Boscombe, Bournemouth.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL, Shelley-road. (492 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the immediate appointment of a RESIDENT SENIOR HOUSE OFFICER (orthopædic and casualty combined). The post is recognised for the F.R.C.S. examination and is tenable for 1 year.

Applications to the Deputy Hospital Secretary.

BURY ST. EDMUNDS. WEST SUFFOLK GENERAL HOSPITAL. (290 Beds.) EAST ANGLIAN REGIONAL HOSPITAL BOARD. ANÆSTHETIC REGISTRAR, vacant middle January. Post recognised for D.A. and provides wide experience. A furnished flat is available outside the Hospital. Appointment for 1 year, renewable for second year.

Detailed applications, including age and names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 28th December, 1953. Candidates invited to visit Hospital by direct arrangement with Hospital Management Committee Secretary at the Hospital.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE.

Bury General Hospital

REGISTRAR in Anæsthetics (resident or non-resident). Recognised for 6 months under the D.A. regulations.

HOUSE OFFICER (surgical), pre-registration post.

SENIOR HOUSE OFFICER (surgical), resident or non-resident.

CLINICAL PATHOLOGIST (Senior House Officer grade), resident or non-resident. Opportunities for gaining experience in all branches of pathology.

SENIOR HOUSE OFFICER (anæsthetics), resident or non-resident. Recognised for D.A.

Applications, stating experience, qualifications, &c., with names of 2 referees, should be made to—

H. WILKINSON, Esq., Group Secretary.

Bury General Hospital, Bury, Lancs.

BRADFORD. ST. LUKE'S HOSPITAL. House Officer (anæsthetics), vacant 1st January, 1954. Salary £350–£450 p.a., less £100 p.a. residential emoluments.

Applications, stating age, qualifications, nationality and experience, with copy testimonials to Secretary, Bradford Royal Infirmary.

BROMSGROVE. ALL SAINTS' HOSPITAL. House PHYSICIAN and HOUSE SURGEON required at All Saints' Hospital, Bromsgrove. Posts vacant mid-January.

Applications, with names of 3 referees, to Group Secretary, Mid-Worcestershire Hospital Management Committee, Birmingham-road, Bromsgrove.

BRIGHTON GENERAL HOSPITAL, Elm-grove, BRIGHTON, 7. HOUSE SURGEON (recognised for F.R.C.S.) for the General Surgical Unit (60 Beds), vacant on 4th February, 1954. Salary in accordance with national scale. The post is recognised as a pre-registration appointment.

Applications, stating age, qualifications, experience, and giving the names of 2 referees, to the Physician-Superintendent.

BRIGHTON GENERAL HOSPITAL, Elm-grove, BRIGHTON, 7. SENIOR HOUSE OFFICER for General Surgical Unit (60 Beds) vacant 31st January, 1954. Recognised for F.R.C.S. and offers considerable scope for operative surgery. Salary in accordance with national scale.

Applications, stating age, qualifications and experience, and giving the names of 2 referees, to the Physician-Superintendent.

BRIGHTON. ROYAL SUSSEX COUNTY HOSPITAL. CASUALTY HOUSE SURGEON (1 of 3) including duties with Orthopædic and Traumatic Unit. Pre-registration and recognised for F.R.C.S. from 1954. Vacant now.

HOUSE PHYSICIANS (Pre-registration), vacant early January.

HOUSE SURGEONS (Pre-registration and recognised for F.R.C.S.), vacant end December and early February.

HOUSE SURGEON (recognised for F.R.C.S.), vacant early December.

Applications, stating age, qualifications and experience, with the names and addresses of 2 referees, to the Administrative Officer, Royal Sussex County Hospital, Brighton.

BRISTOL CLINICAL AREA. The Board of Governors OF THE UNITED BRISTOL HOSPITALS AND THE SOUTH-WESTERN REGIONAL HOSPITAL BOARD. Applications are invited by the above Boards from registered medical practitioners for the joint appointments of SENIOR REGISTRARS in Psychiatry to the Bristol Mental Hospitals. There are 2 vacancies. Applicants should have had wide experience in psychiatry. The appointments will be held for 1 year in the first instance but may be renewed thereafter on an annual basis. The posts offer considerable opportunities for clinical work and research in all branches of adult psychiatry.

Applications (12 copies), stating date of birth, qualifications and experience, together with 12 copies of 2 testimonials, and the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 2nd January, 1954.

BRAINTREE, ESSEX. BLACK NOTLEY HOSPITAL. (544 Beds.) Applications invited for post of HOUSE OFFICER (orthopædic surgery). (First, second, or third post.) Post tenable for 6 months and is recognised under F.R.C.S. regulations. Salary in accordance with the terms of service issued by the Ministry of Health, plus £50 p.a.

Applications, with copies of 3 testimonials, should be forwarded to the Group Secretary, Colchester Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

CAERPHILLY DISTRICT HOSPITAL. (Married quarters available.) 2 SENIOR HOUSE OFFICERS (surgery) and HOUSE SURGEON (pre-registration if suitable candidate available) required at above Hospital—6 miles from Cardiff (144 Beds for acute general surgery, orthopædics, E.N.T., ophthalmology, and gynæcology; 26 Beds for general medicine); busy Outpatient, Casualty, and Pathology Departments.

Apply, with full particulars, to Group Secretary, Hospital Management Committee, St. Martin's-road, Caerphilly, near Cardiff.

CAMBRIDGE. FULBOURN HOSPITAL. Senior House OFFICER (resident or non-resident). Previous psychiatric experience not required. This Hospital of 960 Beds is linked with the Cambridge University Department of Psychology and Addenbrooke's Hospital, and provides a basic psychiatric training leading to the D.P.M.

Applications, stating age, qualifications and experience with names of 2 referees, should be sent to—

Dr. D. H. CLARK, Medical Superintendent.

Fulbourn Hospital, near Cambridge.

CAMBRIDGE. MATERNITY HOSPITAL. Resident OBSTETRICAL OFFICER (second or subsequent post), for 6 months from 1st February, 1954. Recognised Pre-registration Service. Recognised for M.R.C.O.G. and D.Obst.R.C.O.G. examination.

Apply, stating age, nationality, qualifications and experience with dates, and copies of 3 testimonials, to Secretary, United Cambridge Hospitals, Addenbrooke's Hospital, by 26th December. Interviews 5th January, 1954.

CAMBRIDGE. ADDENBROOKE'S HOSPITAL. Resident ANÆSTHETIC SENIOR HOUSE OFFICER for 1 year. Anæsthetic experience essential.

Apply, stating age, nationality, qualifications and experience with dates, and copies of 3 testimonials, to Secretary, by 19th December.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (265 Beds.) GENERAL SURGICAL AND ORTHOPÆDIC HOUSE SURGEON. The above post, which is recognised for the F.R.C.S. Diploma, becomes vacant at the end of December. National Health Service salary and conditions.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (265 Beds.) GYNÆCOLOGICAL HOUSE SURGEON required at Highland Court Annexe, which is a new unit of 25 gynæcological beds situated 3 miles from the above Hospital, with all ancillary services available. 6 months appointment. Post vacant early January, 1954. National Health Service salary and conditions.

Applications, with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CHELTENHAM GENERAL HOSPITAL. (220 Beds.) Applications are invited for the appointment of HOUSE PHYSICIAN, vacant immediately. The post is resident and the salary scale £350–£450 according to experience, less £100 residential emoluments. Terms and conditions of service in accordance with the National Health Service regulations.

Applications, together with at least 2 testimonials, should be sent to STANLEY T. DAVIS, Secretary.

General Hospital, Cheltenham.

CHELTENHAM GENERAL HOSPITAL. (220 Beds.) CHELTENHAM GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the position of HOUSE SURGEON. Salary at the rate of £350, £400, or £450 p.a., less £100 residential emoluments.

Applications, stating age, qualifications, experience, and enclosing copy testimonials, should be sent to the Secretary, Group Management Committee, General Hospital, Cheltenham.

CHICHESTER. ROYAL WEST SUSSEX HOSPITAL. (202 acute beds.) RESIDENT HOUSE SURGEON required for 6 months appointment. National salary scale for first, second, or third posts. Post approved for pre-registration practitioners. Post recognised for F.R.C.S. 6 residents including Resident Surgical Officer and 3 House Surgeons. Vacant from 16th January, 1954.

Apply to the Senior Administrative Officer.

CHELMSFORD. ST. JOHN'S HOSPITAL. Chelmsford HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT SENIOR HOUSE OFFICER (surgery) at above Hospital. The post is recognised for the F.R.C.S. and is now vacant. The successful candidate will gain wide experience in general surgery.

Applications, stating age, nationality, present appointment and previous appointments, both with dates, together with the names and addresses of 2 referees, to be sent to—

R. G. MORRISH, Group Secretary.

Chelmsford and Essex Hospital, London-road, Chelmsford.

COLCHESTER. ESSEX COUNTY HOSPITAL. (189 Beds.) Applications invited for post of HOUSE SURGEON (first, second, third or pre-registration post), tenable for 6 months. Salary in accordance with the terms of service issued by the Ministry of Health.

Applications, with copies of 3 testimonials, should be forwarded to the Group Secretary, Colchester Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

COVENTRY. GROUP 20 HOSPITAL MANAGEMENT COMMITTEE invite applications for the following posts:—

Coventry and Warwickshire Hospital (346 Beds)

HOUSE OFFICER in General Surgery (94 Beds), vacant 14th January, 1954. Recognised for F.R.C.S. and pre-registration. Excellent experience in all types of general surgery.

SENIOR HOUSE OFFICER (fracture and orthopædic) for casualty duties. Recognised for F.R.C.S.

HOUSE SURGEON (fracture and orthopædic) for casualty duties. Recognised for F.R.C.S. and pre-registration.

Gulson Hospital, Coventry (332 Beds)

HOUSE SURGEON required 5th January. Post offers good experience in all types of general surgery. Pre-registration candidates may apply.

Manor Hospital, Nuneaton (139 Beds)

HOUSE SURGEON for Fracture and Orthopædic Department (50 Beds), vacant 5th January, 1954. Post offers good experience of accident surgery. Recognised F.R.C.S. and pre-registration.

HOUSE SURGEON for general surgical duties (including E.N.T. and Ophthalmic). Recognised for F.R.C.S. and pre-registration.

George Eliot Hospital, Nuneaton (289 Beds)

PÆDIATRIC HOUSE PHYSICIAN (35 Beds). Pre-registration post. Recognised for D.C.H., includes supervision of babies on maternity ward.

Applications to Hospital Secretary, Stoney Stanton-road, Coventry.

DARLINGTON MEMORIAL HOSPITAL. (210 Beds.) DARLINGTON DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE SURGEON (resident), which post is recognised for the F.R.C.S. (Eng.). Salary in accordance with national scale.

Apply, giving age and references, to the undersigned forthwith.

G. W. BECKWITH, Group Secretary.

DENBIGH. THE NORTH WALES HOSPITAL FOR NERVOUS AND MENTAL DISORDERS. SENIOR HOUSE OFFICER or JUNIOR HOSPITAL MEDICAL OFFICER required. The Hospital has modern treatment facilities, and, together with its associated Adult and Child Guidance Clinics, is recognised by the R.M.P.A. for the purpose of their D.P.M. examination.

Applications, with names of 2 referees, to the Medica Superintendent.

S. L. FROST, Secretary to the Management Committee.

DARTFORD HOSPITAL MANAGEMENT COMMITTEE.

Locum ANÆSTHETIC REGISTRAR at The West Hill Hospital, Dartford, from 1st January, 1954.

HOUSE SURGEON (orthopædics) at the Southern Hospital, Dartford.

HOUSE OFFICER (E.N.T. and ophthalmology) at the Southern Hospital, Dartford.

*HOUSE PHYSICIAN (general medicine) at Joyce Green Hospital, Dartford.

*Approved for pre-registration purposes.

Applications, stating age, qualifications, experience, nationality, and the names of 2 persons to whom reference may be made, to be sent for House Officers to the Medical Superintendent of the hospital, and for Registrar to the Group Secretary, The Bow Arrow Hospital, Dartford.

DRIFFIELD, YORKS. NORTHFIELD SANATORIUM. SENIOR HOUSE PHYSICIAN required at above Sanatorium which has 78 Beds for adults; providing general sanatorium treatment. Provision may be made available for thoracic surgery, pathological experience and M.M.R. Unit. Time for studying. Salary £670.

Detailed applications to Secretary, Westwood Hospital, Beverley, E. Yorks.

DERBY. DERBYSHIRE CHILDREN'S HOSPITAL. (86 Beds.) SENIOR HOUSE OFFICER (pædiatrics), vacant now.

Apply, giving 2 names for reference, to the Secretary, Derby No. 1 Hospital Management Committee, Babington-lane, Derby.

DERBY. DERBYSHIRE CHILDREN'S HOSPITAL. (86 Beds.) HOUSE SURGEON (pre-registration) or SENIOR HOUSE OFFICER required end of December.

Applications, with 2 names for reference, should be sent to the Secretary, No. 1 Hospital Management Committee, Babington-lane, Derby.

DERBY. DERBYSHIRE ROYAL INFIRMARY. (395 Beds—Hospital recognised for F.R.C.S.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time NON-RESIDENT REGISTRAR (ophthalmology) required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

DOVER. BUCKLAND HOSPITAL. Applications are invited for the post which will become vacant about 1st January, 1954, of HOUSE PHYSICIAN at the above Hospital. The salary will be £350, £400, or £450 a year according to experience. A deduction of £100 a year will be made for residential emoluments.

Applications, stating age, qualifications, experience and the names and addresses of 2 responsible persons to whom reference may be made as to professional ability, should be addressed to the Group Secretary, "Ash-Eton," Radnor Park West, Folkestone.

DOVER. ROYAL VICTORIA HOSPITAL. Applications are invited for the post of HOUSE SURGEON at the above Hospital. The post is recognised by the Royal College of Surgeons. Salary £350, £400, or £450 a year according to experience. A deduction of £100 a year will be made for residential emoluments.

Applications, stating age, qualifications, and the names and addresses of 2 referees, to the Group Secretary, "Ash-Eton," Radnor Park West, Folkestone.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY. RESIDENT SURGICAL OFFICER. Applications invited for appointment vacant on 1st March, 1954. Salary is Senior House Officer grade—£670, less £140 p.a. for residential emoluments. There are 150 surgical beds and the duties of appointment are part surgical and part orthopædic. Opportunity for study is available.

Applications, with 2 recent testimonials, to Secretary, Royal Infirmary, Dumfries.

EAST CUMBERLAND HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE OFFICER (orthopædics) at Cumberland Infirmary, Carlisle (340 Beds), vacant now.

Applications, should be forwarded immediately to the Secretary, East Cumberland Hospital Management Committee, Cumberland Infirmary, Carlisle.

ECCLESHALL (near), STAFFS. STANDON HALL ORTHOPÆDIC HOSPITAL. (104 Beds.) STAFFORD HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (orthopædics), Male or Female, Post vacant.

Applications, giving full particulars, together with copies of 3 recent testimonials, to the Group Secretary, 13, Foregate-street, Stafford.

EPSOM DISTRICT HOSPITAL, Dorking-road, Epsom, SURREY. RESIDENT SENIOR HOUSE OFFICER (obstetrical) required 1st January, 1954. 12 months appointment. Post recognised in obstetrics by the College for M.R.C.O.G. and D.Obst.R.C.O.G. purposes. Candidates may visit Hospital by appointment with Consultant concerned.

Applications, stating age, qualifications and experience, with copies of 3 recent testimonials, should be sent by 22nd December to Group Secretary at above address.

EXETER CLINICAL AREA. South-Western Regional HOSPITAL BOARD. Applications are invited from registered medical practitioners preferably in general practice for the appointment of CLINICAL ASSISTANT in E.N.T. Surgery to undertake 2 weekly sessions in the Exeter Clinical Area. The successful candidate will work under the general direction of the Consultant E.N.T. Surgeons, and may be required to undertake both operative and outpatient work at Newton Abbot and Dawlish Hospitals or at such other hospitals as may be determined by the Regional Board from time to time. Previous experience in E.N.T. surgery is essential. Payment will be at the rate of £175 p.a. per weekly 3½-hour session.

Applications, stating date of birth, qualifications and experience, together with the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 2nd January, 1954.

FOLKESTONE. ROYAL VICTORIA HOSPITAL. Applications are invited for the appointment of SURGICAL HOUSE OFFICER at the above Hospital. Salary £350, £400, or £450 a year according to experience, less a deduction of £100 a year for residential emoluments. This post is recognised by the Royal College of Surgeons for the F.R.C.S. examination.

Applications, stating age, qualifications, experience, and the names and addresses of 2 referees, to the Group Secretary, "Ash-Eton," Radnor Park West, Folkestone.

FOLKESTONE. ROYAL VICTORIA HOSPITAL. Applications are invited for the post of HOUSE SURGEON. The duties will be mainly obstetrical and gynæcological with some general surgery. Salary £350, £400 or £450 a year according to experience. A deduction of £100 a year will be made for residential emoluments.

Applications, stating age, qualifications, and the names and addresses of 2 referees, to the Group Secretary, "Ash-Eton," Radnor Park West, Folkestone.

GLASGOW ROYAL INFIRMARY. Senior House Officer in Pathology. Duties at above Infirmary.

Write not later than 15th December, 1953, giving 3 names for reference, to the Secretary, Board of Management for Glasgow Royal Infirmary and Associated Hospitals, 135, Buchanan-street, Glasgow, C.1.

GRIMSBY GENERAL HOSPITAL. (220 Beds.) Grimsby HOSPITALS MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (gynæcological), Male or Female, for duties at the above-named Hospital and Scartho Road Infirmary, Grimsby. The post is now vacant.

Applications, with names of 2 referees, to Hospital Secretary, Grimsby General Hospital.

GRIFFITHSTOWN, MON. COUNTY HOSPITAL. (251 Beds. Recognised F.R.C.S.) SENIOR HOUSE OFFICER in General Surgery required 1st January. Post recognised F.R.C.S. for 6 months and tenable 6 or 12 months as desired. Salary £670 a year, less £130 board-residence if resident.

Write as soon as possible, quoting 2 referees, to—

64, Cardiff-road, Newport, Mon. T. A. JONES.

HALIFAX. ROYAL HALIFAX INFIRMARY. (301 Beds.) SENIOR HOUSE OFFICER in Orthopædic Surgery required at the above acute General Hospital. Duties include work in the Casualty Department. Post, recognised for F.R.C.S., vacant December. Salary £670 p.a. with deduction of £130 p.a. for residence, &c.

Applications to Group Secretary, Royal Halifax Infirmary, Halifax.

HALIFAX GENERAL HOSPITAL. (425 Beds.) Junior HOSPITAL MEDICAL OFFICER in Anæsthetics required. Post now vacant.

Applications to Group Secretary, Royal Halifax Infirmary, Halifax.

HAMPTON COURT, MIDDLESEX. BEARSTED MEMORIAL HOSPITAL (JEWISH MATERNITY HOSPITAL). RESIDENT OBSTETRIC HOUSE OFFICER (third post) required at above Hospital, commencing early January, 1954. Obstetric experience an advantage but not essential. Post recognised for the D.Obst.R.C.O.G.

Application forms from the Secretary, Tottenham Group Hospital Management Committee, The Green, N.15, which should be returned at once.

HASTINGS HOSPITAL MANAGEMENT COMMITTEE. Locum OPHTHALMIC REGISTRAR required immediately. Salary £16 per week.

Apply Group Secretary, 11, Holmesdale-gardens, Hastings (Phone : 5400).

HASTINGS. ROYAL EAST SUSSEX HOSPITAL. (150 Beds.) HOUSE SURGEON required. Resident, Male or Female. Post vacant 16th December. National scale of salary.

Apply to Hospital Administrator.

HASTINGS. ROYAL EAST SUSSEX HOSPITAL. (150 Beds.) HOUSE PHYSICIAN (resident) required (Male or Female). Pre-registration post, vacant 3rd January. National scale of salary.

Apply to Hospital Administrator.

HAILSHAM, SUSSEX. HELLINGLY MENTAL HOSPITAL. HAILSHAM HOSPITAL MANAGEMENT COMMITTEE. JUNIOR HOSPITAL MEDICAL OFFICER. Single residential accommodation available. Salary £700 p.a., rising by annual increments of £50 to £1000 p.a.

Applications, stating age, qualifications, and appointments held, to the Medical Superintendent, Hellingly Hospital, Hailsham, Sussex.

HAVERFORDWEST. PEMBROKE COUNTY WAR MEMORIAL HOSPITAL. (151 Beds—Recognised by the Royal College of Surgeons and for Pre-registration Service.) Applications are invited for the post of RESIDENT HOUSE OFFICER (surgical). Salary £350, £400, or £450 p.a., plus grant of £50 p.a., according to experience, less £100 p.a. for residential emoluments.

Applications, stating age, qualifications, experience, and nationality, with names and addresses of 3 referees, to Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

HAYWARDS HEATH. HURSTWOOD PARK HOSPITAL. SENIOR HOUSE OFFICER (neurology), resident or non-resident, required at the above Hospital. Duties primarily neurological but the person appointed will be expected to undertake certain psychiatric duties in Hurstwood Park Hospital and the adjoining St. Francis Hospital. Salary £670 p.a. in accordance with the terms and conditions of service with appropriate deduction for residence.

Applications, with the names and addresses of 3 referees, to the Secretary to the Hospital Management Committee, St. Francis Hospital, Haywards Heath, Sussex.

HEMEL HEMPSTEAD, HERTS. WEST HERTS HOSPITAL. Locum HOUSE OFFICER (general surgery) required for 2 weeks from the 2nd January, 1954. Salary £8 per week.

Applications, with copies of 2 recent testimonials, should be sent to the Hospital Secretary at once.

HEMEL HEMPSTEAD, HERTS. WEST HERTS HOSPITAL. HOUSE OFFICER (pædiatrics), second or subsequent post. The appointment, which is recognised for the D.C.H., falls vacant on 26th December, 1953.

Applications, accompanied by copies of 2 recent testimonials, should be sent to the Administrator at once.

HEREFORD GENERAL HOSPITAL. (154 Beds—71 surgical.) HOUSE OFFICER (general surgery), vacant from 13th January, 1954. Hospital recognised by Royal College of Surgeons.

Applications, with copies of 2 recent testimonials, to the Secretary, Hospital Management Committee, County Hospital, Hereford.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) CASUALTY OFFICER (Male or Female), third post held, with attachment to Pædiatrician and Ophthalmic Consultant. Salary £450 p.a., less £100 p.a. residential emoluments. Appointment to commence immediately.

Apply, with full details and references, to Secretary, Hertford County Hospital, Hertford, Herts.

HEXHAM GENERAL HOSPITAL. (313 Beds.) Hexham AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. A vacancy for a Pre-registration HOUSE SURGEON (Male or Female) in Orthopædics will occur at the above Hospital in January next; the Hospital is recognised by the Royal College of Surgeons. 3 months of the appointment can be taken in general surgery.

Applications, with names of 3 referees, should be sent as soon as possible to the Group Secretary, General Hospital, Hexham, Northumberland.

HEXHAM GENERAL HOSPITAL. (313 Beds.) Hexham AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (Male or Female) in General Surgery at Hexham General Hospital; a hospital recognised by the Royal College of Surgeons. The post is tenable for 12 months. Accommodation is available for a single person and may be available for a married person, for which a charge would be made.

Applications, with names of 3 referees, should be sent as soon as possible to the Group Secretary, General Hospital, Hexham, Northumberland.

HEXHAM GENERAL HOSPITAL. (313 Beds.) Hexham AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. A vacancy for a Pre-registration HOUSE SURGEON (Male or Female) in General Surgery will occur at the above Hospital in January next; the Hospital is recognised by the Royal College of Surgeons. 3 months of the appointment can be taken in orthopædics.

Applications, with names of 3 referees, should be sent as soon as possible to the Group Secretary, General Hospital, Hexham, Northumberland.

HOUNSLOW HOSPITAL, Staines-road, Hounslow, MIDDLESEX (General Acute—81 Beds) invite applications for appointment of RESIDENT HOUSE SURGEON; duties mainly Casualty Department, 6 months appointment. National Health Service salary and conditions of service.

Applications, stating qualifications, age, &c., with copies of up to 3 recent testimonials or names for reference, to the Hospital Secretary.

HOVE GENERAL HOSPITAL, Sackville-road, Hove, 3. HOUSE SURGEON AND CASUALTY OFFICER (recognised for F.R.C.S.). Post vacant immediately. Salary and conditions of service in accordance with national scale (£350–£450, less £100 p.a. for residential emoluments).

Applications, stating age, qualifications, experience, and naming 2 referees, to the Administrative Officer.

HOVE GENERAL HOSPITAL, Sussex. House Physician (pre-registration), vacant early in January. Excellent clinical material available. Post is suitable for candidates working for higher degree. Salary £350–£450, less £100 p.a. for residential emoluments.

Applications, stating age, qualifications, full details of experience, together with names and addresses of 2 referees, to the Administrative Officer.

HULL. VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street. HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON. Post now vacant. 6-monthly term. Counts towards D.C.H. qualification. Salary as per national terms of service.

Replies with testimonials, to be sent to the Hospital Secretary.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (360 Beds.) Applications are invited for the post of HOUSE SURGEON to the E.N.T. and Ophthalmic Departments. Post recognised for D.L.O. examination.

Applications, stating age, nationality, experience and copies of recent testimonials, to the Hospital Secretary.

KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL. (112 Beds.) HOUSE PHYSICIAN and HOUSE SURGEON required at above Hospital. Posts fall vacant late December.

Applications, with the names of 3 referees, to the Hospital Secretary.

KINGSTON HOSPITAL, Wolverton-avenue, Kingston-upon-Thames. KINGSTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following posts:—

(1) HOUSE OFFICER (gynæcology) resident, vacant 1st January, 1954. Salary £450 p.a. The post is recognised for the M.R.C.O.G. in Gynæcology.

(2) PRE-REGISTRATION Posts.

(i) General Surgery (2 posts).
(ii) General Medicine (1 post).
(iii) Obstetrics (1 post).

All pre-registration posts are resident and become vacant 1st February, 1954.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, or names of referees, should reach the Physician-Superintendent of the Hospital within 1 week of appearance of this advertisement.

KIRKCALDY GENERAL HOSPITAL, Kirkcaldy. (74 Beds—Acute Surgical and Orthopædic.) 4 SURGICAL HOUSE OFFICERS required, 1 to commence duty forthwith, 1 in January, 1 in February and 1 on 1st of April, 1954. The earliest vacancy arises in the Orthopædic Department and consideration will be given to the grading of this post as a Senior House Officer according to previous experience. All the posts qualify, if necessary, for pre-registration. Salary in accordance with national scale.

Applications, with copies of 2 recent testimonials, to be sent to the Medical Superintendent, East Fife Hospitals Board of Management, 243A, High-street, Kirkcaldy.

LYMINGTON HOSPITAL, Lymington, Hants. (107 Beds.) RESIDENT SENIOR HOUSE OFFICER (medical) required immediately.

Applications with copies of testimonials, to be submitted as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

KENDAL. WESTMORLAND COUNTY HOSPITAL. (80 Beds.) Applications are invited for the appointment of RESIDENT SENIOR HOUSE OFFICER (obstetrics and gynæcology). The post is vacant 4th January, and normally tenable for 12 months. The successful applicant will be attached to the Specialist Unit.

Applications, with full particulars and names of 2 referees, to be addressed to Group Secretary, Royal Lancaster Infirmary, Lancaster.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) RESIDENT SENIOR HOUSE OFFICER (medical). Duties include care of acute cases under the supervision of 2 Consultant Physicians and attendance at Consultative Clinics. The post is vacant 1st January, 1954, and normally tenable for 1 year.

Applications, with names of 2 referees, to be addressed to the Group Secretary, Royal Lancaster Infirmary.

LEEDS (near). WOODLANDS (ORTHOPÆDIC) HOSPITAL, RAWDON. (92 Beds.) HOUSE OFFICER (Junior), required for Orthopædic Hospital at Rawdon. The post will be adjoined to the Casualty and Orthopædic Unit at the Royal Infirmary, Bradford, and offers excellent opportunities for a person interested in orthopædic work. Salary £350–£450 p.a., less £100 p.a. residential emoluments.

Applications, stating age, nationality, qualifications and experience, with copy testimonials, to Secretary, Bradford Royal Infirmary.

LEEDS REGIONAL HOSPITAL BOARD invites applications for the following REGISTRAR posts:—

Anæsthetics

(*a*) Halifax Group (resident).

(*b*) Bradford A and B Groups (preferably resident).

General Medicine

(*a*) Halifax General Hospital (110 general medical beds) (resident).

(*b*) Halifax Group (non-resident). Duties divided between general medicine and geriatrics (110 general medical beds (Halifax General Hospital) and 380 geriatric beds (St. John's Hospital)).

(*c*) Harrogate and Ripon Group (non-resident). Includes some duties in pædiatrics (45 general medical, 20 pædiatric beds).

General Surgery

Hull A Group, mainly at Western and Kingston General Hospitals (150 general surgical beds) (resident/non-resident).

Orthopædic Surgery

(*a*) Harrogate General Hospital (31 orthopædic beds) (non-resident).

(*b*) Woodlands Orthopædic Hospital, Rawdon (100 Beds) and Orthopædic Department, Bradford Royal Infirmary. Offers excellent training in all branches of accident and orthopædic surgery (resident at Woodlands).

Applications, stating age, qualifications, and details of present and previous appointments with dates, together with the names and addresses of 3 referees, should be forwarded to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, not later than 23rd December, 1953.

LUTON MATERNITY HOSPITAL, Luton, Beds. Applications are invited for the post of OBSTETRIC HOUSE SURGEON, vacant 1st January, 1954. The post, which is for 6 months in the first instance, is recognised for the D.Obst.R.C.O.G.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent by 19th December to the Secretary, Luton and Hitchin Group Hospital Management Committee, St. Mary's Hospital, Luton, Beds.

LUTON AND DUNSTABLE HOSPITAL, Luton, Beds. Applications are invited for the post of ORTHOPÆDIC HOUSE SURGEON, including duties with the Accident Service, vacant 12th January, 1954. Recognised as pre-registration post and for F.R.C.S. The appointment will be for 6 months in the first instance.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the Secretary, by 19th December, 1953.

LUTON AND DUNSTABLE HOSPITAL, Luton, Beds. Applications are invited for the post of GYNÆCOLOGICAL HOUSE SURGEON, vacant 1st January, 1954. Recognised as pre-registration post and includes some obstetrical duties. The appointment will be for 6 months in the first instance.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the Secretary by 19th December.

LUTON AND DUNSTABLE HOSPITAL, Luton, Beds. Applications are invited for the appointment of HOUSE SURGEON for Accident Service, including duties in the Hand Infection Unit, vacant 1st January, 1954. Recognised as pre-registration post and for F.R.C.S. The appointment will be for 6 months in the first instance.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the Secretary by 19th December.

LUTON AND DUNSTABLE HOSPITAL, Luton, Beds. Applications are invited for 2 posts of HOUSE SURGEONS, vacant 1st January, 1954. Recognised as pre-registration posts and for F.R.C.S. The appointments will be for 6 months in the first instance.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the Secretary by 19th December, 1953.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). RESIDENT HOUSE SURGEON (general surgery). Post vacant. Recognised for pre-registration.

Apply to the Hospital Secretary.

LINCOLN. COUNTY HOSPITAL. (200 Beds—Recognised training hospital for F.R.C.S.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL REGISTRAR required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

LINCOLN. BRACEBRIDGE HEATH HOSPITAL FOR MENTAL DISEASES. (1290 Beds.) Applications are invited for the appointment of JUNIOR HOSPITAL MEDICAL OFFICER (resident or non-resident; Male or Female; married or single). Salary and terms of service as issued by the Ministry of Health. Commencing salary £700 p.a. rising to £1000 p.a. There is furnished accommodation available for a married officer, or residential accommodation for a single person. There will be scope for work at outpatient clinics and in the use of modern psychiatric methods in the wards. Previous psychiatric experience is not essential. The appointment is subject to the provisions of the National Health Service superannuation regulations.

Applications, with names of 3 referees, should be forwarded as soon as possible to the Medical Superintendent, Bracebridge Heath Hospital, near Lincoln.

LIVERPOOL. WALTON HOSPITAL. (1321 Beds.) The following resident posts become vacant on the dates stated:—

1st March, 1954
SENIOR HOUSE OFFICER (chest diseases).
SENIOR HOUSE OFFICER (orthopædics).
SENIOR HOUSE OFFICER (pathology).
4 HOUSE PHYSICIANS (general medicine).
3 HOUSE SURGEONS (general surgery).
1 HOUSE SURGEON (gynæcology).
1 HOUSE SURGEON (obstetrics).
1 HOUSE SURGEON (orthopædics).

1st April, 1954
4 HOUSE PHYSICIANS (general medicine).
1 HOUSE SURGEON (general surgery).
1 HOUSE SURGEON (gynæcology).
1 HOUSE SURGEON (obstetrics).

All the above posts in the House Officer grade are recognised for Pre-registration Service.

Applications, stating age, date of qualification, experience, and copies of 2 recent testimonials, should be addressed to the Physician-Superintendent, Walton Hospital, Liverpool, 9, by 9th January, 1954.

MANCHESTER. UNITED MANCHESTER HOSPITALS. SAINT MARY'S HOSPITALS. RESIDENT CLINICAL PATHOLOGIST (Senior House Officer grade). Applications are invited for the above new post. Candidates must have held house appointments but previous laboratory experience is not essential. The duties will consist of routine work in the Department of Clinical Pathology, mainly at the Saint Mary's Hospitals, but the holder of the post will also spend some time in the Manchester Royal Infirmary. The appointment is for 12 months at a salary of £670 p.a., less £130 p.a. for residence, &c.

Application to be made on forms obtainable from the undersigned, and to be returned not later than 31st December, 1953.

A. R. WISE, General Superintendent.

Saint Mary's Hospitals, Whitworth Park, Manchester, 13.

MANCHESTER, 9. BOOTH HALL CHILDREN'S HOSPITAL. Applications are invited for the post of HOUSE SURGEON. Recognised pre-registration post. National scale conditions.

Apply, stating age, nationality, and usual relevant particulars, to the Medical Superintendent as soon as possible.

MANCHESTER REGIONAL HOSPITAL BOARD. Applications are invited for the resident post of REGISTRAR attached to the E.N.T. Unit.

Applications, together with the names and addresses of 3 referees, should be addressed to the Group Secretary, Burnley and District Hospital Management Committee, Burnley General Hospital.

MANCHESTER REGIONAL HOSPITAL BOARD. Applications are invited for the post of REGISTRAR in Orthopædics which is joint between the Rochdale and District and Bury and Rossendale Hospital Management Committees. Recognised under the F.R.C.S. regulations.

Applications to the Group Secretary, Birch Hill Hospital, Rochdale.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of RESIDENT REGISTRAR in the Board's Non-tuberculous Thoracic Surgery Unit of 48 Beds at Park Hospital, Davyhulme. 1 year appointment, renewable. Post now vacant.

Application forms from Secretary, West Manchester Hospital Management Committee, Park Hospital, Davyhulme, Urmston.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of REGISTRAR in Anæsthetics which may be either resident or non-resident. The main duties will be with the Stockport and Buxton Hospital Management Committee with some duties in the Macclesfield and District Hospital Management Committee Group. Hospitals recognised for the D.A. and F.F.A.R.C.S.

Applications, stating age, qualifications and experience, together with copies of 2 testimonials, should reach the undersigned by 16th December, 1953.

H. G. PRICE, Group Secretary.

59B, Shaw-heath, Stockport, Cheshire, 30th November, 1953.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the non-resident post of REGISTRAR in Orthopædic Surgery, to the Blackpool and Fylde Group of hospitals, with main duties at Victoria Hospital, Blackpool.

Applications, with copies of 2 recent testimonials, to the Group Secretary, Blackpool and Fylde Hospital Management Committee, Victoria Hospital, Blackpool.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of Whole-time RESIDENT SURGICAL REGISTRAR to the West Manchester Hospital Management Committee. Primarily for duty at Park Hospital, Davyhulme, but with duties at other Group hospitals. Post vacant 1st January, 1954. 12 months appointment subject to renewal.

Forms from Secretary, Park Hospital, Davyhulme.

MANCHESTER, 19. THE DUCHESS OF YORK HOSPITAL FOR BABIES. MANCHESTER BABIES' AND CHILDREN'S HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (Male or Female) for 6 months from 1st December. The Hospital is associated with Manchester University for teaching purposes.

Applications, with copies of 3 testimonials, to be sent to the Administrative Officer of the Hospital as soon as possible.

MANCHESTER. WEST MANCHESTER HOSPITAL MANAGEMENT COMMITTEE.

Park Hospital, Davyhulme (General Hospital—426 Beds)

1 SENIOR HOUSE OFFICER (general medicine), vacant 31st December, 1953.

1 SENIOR HOUSE OFFICER (anæsthetics), Hospital recognised for training for Diploma in Anæsthetics, vacant 5th January, 1954.

3 HOUSE OFFICERS (general surgery) (Pre-registration). Posts recognised for F.R.C.S. examination. 2 posts vacant 12th January, 1954. 1 post vacant 31st January, 1954.

1 HOUSE OFFICER (E.N.T.) (Pre-registration), vacant 13th January, 1954.

Eccles and Patricroft Hospital (General Hospital—72 Beds)

1 HOUSE OFFICER (Post-registration post). Additional allowance of £50 p.a., vacant 1st January, 1954. The work of the Hospital is mainly surgical and there is a busy Outpatient Department.

Forms from Secretary, Park Hospital, Davyhulme.

MANCHESTER (near), ALTRINCHAM. ST. ANNE'S HOSPITAL, near MANCHESTER. (53 Beds. Recognised for D.L.O. examinations. Staffed by Manchester Consultants.) NORTH AND MID-CHESHIRE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (E.N.T.), to commence in December, 1953. This is a busy hospital, and offers excellent scope for a suitable officer. Salary and conditions of service as laid down by the Ministry of Health.

Applications to the Group Secretary, North and Mid-Cheshire Hospital Management Committee, The Hospital, Sinderland-road, Altrincham, Cheshire.

MAIDENHEAD HOSPITAL, St. Luke's-road, Maidenhead. Applications invited for post of HOUSE PHYSICIAN, vacant early January. National salary.

Applications, stating age, qualifications and experience, with names of referees, to Hospital Secretary.

MEXBOROUGH. MONTAGU HOSPITAL. (123 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL REGISTRAR required. Appointment for 1 year in the first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT ANÆSTHETIST for joint duties at the Kent County Ophthalmic and Aural Hospital, and the West Kent General Hospital, Maidstone (total beds 248). The post, which is of Senior House Officer grade, will be vacant on 1st January, 1954, and carries a salary of £670 a year, less £150 for residential emoluments. Excellent experience under Consultant Anæsthetists is available, and the post is recognised for the F.F.A. R.C.S. examination.

Applications, stating age, nationality, qualifications and experience, together with the names of 2 suitable referees, should be forwarded to the Administrative Officer, Kent County Ophthalmic and Aural Hospital, Maidstone.

MAIDSTONE. WEST KENT GENERAL HOSPITAL. (135 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following pre-registration posts:—

(*a*) HOUSE SURGEON.
(*b*) HOUSE PHYSICIAN.

6 months appointment. Posts vacant January, 1954. Salary at the rate of £350, £400, or £450 according to experience. A deduction at the rate of £100 a year is made in respect of board and lodging and other services provided.

Applications should be forwarded as soon as possible to the Administrative Officer at the Hospital.

MAIDSTONE. WEST KENT GENERAL HOSPITAL. (135 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE SURGEON. Post recognisable for the F.R.C.S.(Eng.). Salary £670 a year, with deduction of £150 a year for residential emoluments.

Applications to the Administrative Officer at the Hospital as soon as possible.

MAIDSTONE (near). LENHAM SANATORIUM. MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from practitioners, with at least 2 years experience since registration, for the appointment of RESIDENT ASSISTANT PHYSICIAN at Lenham Sanatorium, near Maidstone. Previous experience in tuberculosis not essential. The Sanatorium which is within 1¼ hours travelling distance of London has 172 Beds and is visited by Thoracic Surgeons. Salary according to experience within the scale £700–£50–£1000 a year, with a deduction of £150 for residential emoluments. Appointment for 12 months in the first instance.

Applications, with the names and addresses of 2 referees, to the Physician-Superintendent, Lenham Sanatorium, near Maidstone (Telephone Lenham 314).

MAIDSTONE. PRESTON HALL HOSPITAL, British LEGION VILLAGE, MAIDSTONE, KENT. Applications are invited for the appointment of SENIOR HOUSE OFFICER. Salary £670 p.a., national scale and conditions. The sanatorium contains 330 Beds for the treatment of tuberculosis and the duties of the post will chiefly consist of acting as House Surgeon to the Thoracic Surgical Unit.

Applications, stating age, qualifications, and names of 2 referees, to be sent by not later than 2nd January, 1954, to—

A. A. HOWICK, Secretary to the Management Committee.

MARKET DRAYTON (near), SALOP. CHESHIRE JOINT SANATORIUM. (305 Beds.) STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. RESIDENT MEDICAL OFFICER (Junior Hospital Medical Officer or Senior House Officer, according to experience). Post offers exceptional experience in the treatment of pulmonary tuberculosis.

Applications to the Medical Superintendent at the Sanatorium.

NEWTON ABBOT HOSPITAL. (General Section—65 Beds.) RESIDENT SENIOR HOUSE SURGEON (Male or Female) required immediately. Married quarters available.

Applications, stating qualifications, nationality, age, with copy testimonials, to be sent to the Group Secretary, Torquay District Hospital Management Committee, 62/64, East-street, Newton Abbot, S. Devon.

NEWPORT, I.W. ST. MARY'S HOSPITAL. (365 Beds.) ISLE OF WIGHT GROUP HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER in Surgery. Salary £670 p.a. Applications are invited from registered medical practitioners. Vacant now.

HOUSE SURGEON. Post approved for Pre-registration Service. National salary scale and conditions. Vacant now.

Applications, stating age, nationality, qualifications, and experience, together with the names of 2 referees, to be sent as soon as possible to Group Secretary, Hospital Management Committee Headquarters, Clatterford House, Carisbrooke, I.W.

NEWPORT, MON. ROYAL GWENT HOSPITAL. (260 Beds—Recognised F.R.C.S.) SENIOR HOUSE OFFICER required for Casualty Department, which consists of a Senior Hospital Medical Officer in full-time charge and 2 Senior House Officers. Vacant 1st January. Post recognised F.R.C.S. for 6 months and tenable 6 or 12 months as desired. Attendances 48,000 annually. Good experience.

Write quoting 2 referees, to Group Secretary, 64, Cardiff-road, Newport.

NEWPORT, MON. ST. WOOLOS HOSPITAL. (378 Beds.) SENIOR HOUSE OFFICER required. The Surgical Department of 68 Beds consists of a Consultant engaged full-time here, a House Surgeon, and this post. Opportunity for excellent experience.

Write, quoting 2 referees, to Group Secretary, 64, Cardiff-road, Newport, Mon.

NEWPORT, MON. ST. WOOLOS HOSPITAL. (378 Beds—Recognised D.C.H. and Pre-registration Service.) HOUSE PHYSICIAN required 1st February. The successful candidate will also attend the Outpatient Department of another Hospital with Consultant.

Write, quoting 2 referees, to Group Secretary, 64, Cardiff-road, Newport.

NEWMARKET GENERAL HOSPITAL, Newmarket, SUFFOLK. Applications are invited for the post of HOUSE PHYSICIAN, vacant on 7th January, 1954. Duties include house charge of general medical and pulmonary tuberculosis beds with some opportunities for anæsthetics under the supervision of the Consultant Anæsthetist. The post is resident and tenable for 6 months, salary in accordance with national scale, less emoluments.

Applications, with copies of 3 recent testimonials, should be addressed to the Physician-Superintendent.

NEWARK GENERAL HOSPITAL, Newark. (82 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL OFFICER with general duties required at Registrar rate of pay. This post offers good experience to anyone preparing to enter General Practice. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

NEWCASTLE GENERAL HOSPITAL. (861 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. The following resident posts become vacant on 7th January, 1954. Some undergraduate teaching is conducted in most departments of the Hospital.

HOUSE PHYSICIANS (General Medical Wards).
HOUSE PHYSICIAN (Cardiovascular Department).
HOUSE PHYSICIAN (Chest Unit).
HOUSE SURGEONS (general surgery).
HOUSE SURGEON (Casualty Department).
HOUSE SURGEON (Orthopædic Department).
HOUSE PHYSICIAN (Geriatric Unit).
HOUSE PHYSICIANS (Children's Unit). This department is actively associated with the Department of Child Health of Durham University, and the post offers good opportunities for gaining experience in many aspects of pædiatrics.

Of the above posts the following are recognised for the purpose of Pre-registration Service and applications will be accepted from students on the point of taking their qualifying examinations :—

House Physicians (2), General Medical Wards.
House Surgeons (2), General Surgical Wards.
House Physician (1), Children's Wards.
House Surgeon (1), Casualty Department.
House Physician (1), Geriatric Unit.

Applications should be addressed to the Secretary, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4, together with 1 copy of 2 recent testimonials, by 18th December, 1953.

NEWCASTLE GENERAL HOSPITAL. (861 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. DEPARTMENT OF OBSTETRICS AND GYNÆCOLOGY.

OBSTETRICAL HOUSE SURGEON (70 Beds).
GYNÆCOLOGICAL HOUSE SURGEON (30 Beds).

The above resident posts become vacant on 7th January, 1954. Consideration may be given to the possibility of alternating these posts. The post of Obstetrical House Surgeon is recognised for the purpose of Pre-registration Service and preference will be given to provisionally registered persons who have served 6 months in a medical or surgical post since qualification. The department is recognised for the Diploma of M.R.C.O.G., and D.Obst.R.C.O.G., and undertakes the training of Medical Students in the University of Durham.

Applications should be addressed to the Secretary, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4, together with 1 copy of 2 recent testimonials, by 18th December, 1953.

NEWCASTLE. WALKERGATE HOSPITAL. (326 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. HOUSE PHYSICIAN (Medical Unit). The post becomes vacant on 7th January, 1954. This post is recognised for the purpose of Pre-registration Service and applications will be accepted from students who are on the point of taking their qualifying examinations.

Applications should be addressed to the Secretary, Walkergate Hospital, Newcastle upon Tyne, 6, together with 1 copy of 2 recent testimonials by 18th December, 1953.

NEWCASTLE. WALKERGATE HOSPITAL. Chest DEPARTMENT. NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (resident). There are 105 Beds in this Department and the Officer will be required to carry out duties assigned to him under the supervision of the Senior Chest Physician. Facilities for study are available.

Applications, with testimonials or the names of 2 referees, should be sent to the Hospital Secretary, Walkergate Hospital, Newcastle upon Tyne, 6.

NORWICH. NORFOLK AND NORWICH HOSPITAL. Locum REGISTRAR to the E.N.T. Department required for the period 4th January–15th March, 1954. The present holder will be on Study leave. Salary £16 per week in accordance with Ministry of Health terms and conditions.

Applications, stating age, qualifications and experience, together with the names of 2 referees, to Group Secretary, c/o Norfolk and Norwich Hospital, St. Stephen's-road, Norwich.

NORWICH. NORFOLK AND NORWICH HOSPITAL. Applications are invited for the following posts :—

HOUSE SURGEON (Male or Female). Recognised for Final F.R.C.S. examination. Duties entirely general surgical. Vacant 1st February, 1954

HOUSE SURGEON (Male or Female) at the West Norwich Hospital, Bowthorpe-road, Norwich. Recognised for Final F.R.C.S. examination. The beds at this Hospital are under the control of the Consultant staff at the Norfolk and Norwich Hospital. Vacant 1st February, 1954.

JUNIOR CASUALTY OFFICER (2 Casualty Officers are employed in the department).

Salary for each of the above appointments (which are pre-registration posts) £350, £400, or £450, according to experience, less £100 p.a. for residential emoluments.

Applications, stating age, qualifications and experience, together with the names of 2 referees, to the Group Secretary, c/o Norfolk and Norwich Hospital, St. Stephen's-road, Norwich.

NOTTINGHAM. HIGHBURY HOSPITAL. Senior House OFFICER (non-resident) required. The successful candidate will in addition to medical duties have an opportunity of assisting in the Obstetric Unit. Terms and conditions of service as laid down by the Ministry of Health.

Apply in writing, stating age, qualifications and experience, together with copies of testimonials, to the undersigned as soon as possible. HENRY M. STANLEY, Group Secretary.

NOTTINGHAM CITY HOSPITAL. (746 Beds.) Applications are invited for the post of RESIDENT ANÆSTHETIST (Senior House Officer), vacant 6th January, 1954. Salary £670 p.a., less £145 p.a. for residential emoluments. The post is recognised for the D.A. and the F.F.A. R.C.S.

Applications, stating age, nationality and qualifications, together with copies of not more than 3 testimonials, to be sent to the Hospital Secretary, City Hospital, Hucknall-road, Nottingham.

NOTTINGHAM CITY HOSPITAL. (746 Beds.) Sheffield REGIONAL HOSPITAL BOARD. Whole-time RESIDENT REGISTRAR (pathology) required. Appointment for 1 year in the first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st De ember, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

NOTTINGHAM GENERAL HOSPITAL. (441 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT or NON-RESIDENT CASUALTY REGISTRAR required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of ORTHOPÆDIC AND FRACTURE SENIOR HOUSE OFFICER. The post offers exceptional experience in traumatic and orthopædic surgery. Duties to commence as soon as possible. Salary and conditions of service in accordance with Ministry regulations. If resident £150 deducted for emoluments.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to—

HENRY M. STANLEY, Secretary.

NOTTINGHAM GENERAL HOSPITAL. Resident HOUSE PHYSICIAN required (Male or Female) for the above Hospital. Duties to commence on or about 21st December. Salary and conditions of service in accordance with published regulations. The appointment is for a period of 6 months.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to—

HENRY M. STANLEY, Group Secretary.

NOTTINGHAM GENERAL HOSPITAL. Resident HOUSE SURGEON required (Male or Female) for the above Hospital. Duties to commence on or about 14th January, 1954. Salary and conditions of service in accordance with published regulations. The appointment is for a period of 6 months.

Applications, stating age, qualifications and experience, to be sent to HENRY M. STANLEY, Group Secretary.

NOTTINGHAM GENERAL HOSPITAL. Resident HOUSE SURGEON required (Male or Female) for the above Hospital. Duties to commence on or about 21st December. Salary and conditions of service in accordance with published regulations. The appointment is for a period of 6 months.

Applications, stating age, qualifications and experience, to be sent to HENRY M. STANLEY, Group Secretary.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of RESIDENT SENIOR HOUSE OFFICER for the Casualty Department. Salary (less £150 emoluments) and conditions of service in accordance with those laid down by the Ministry. Duties to commence on or about 30th December, 1953.

Applications, stating age, qualifications and experience, together with copies of testimonials to be sent to—

General Hospital, Nottingham. HENRY M. STANLEY.

ORPINGTON HOSPITAL, Orpington, Kent. Resident HOUSE PHYSICIAN (Tuberculosis Unit, 60 Beds—30 male and 30 female). Affords good clinical experience in the diagnosis and treatment of acute and chronic pulmonary tuberculosis. Offers excellent opportunity for studying for higher qualifications, with access to clinical material in the general medical and surgical wards of the Hospital. Ex-patient medical officer would be favourably considered.

Apply Physician-Superintendent.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointments :—

Saint Mary's Hospital
(74 acute medical beds)

SENIOR HOUSE PHYSICIAN, vacant 23rd February, 1954.

HOUSE PHYSICIANS, vacant 4th February, 1954, and 8th February, 1954. Pre-registration posts.
(107 surgical beds) Recognised for F.R.C.S.

SENIOR HOUSE OFFICER (Casualty and Orthopædic Departments), vacant 14th January, 1954.

HOUSE SURGEONS, vacant 20th January, 1954, and 2nd February, 1954. Pre-registration posts.
PÆDIATRIC DEPARTMENT (53 Beds)

HOUSE PHYSICIAN, vacant 26th January, 1954.

Royal Portsmouth Hospital
(60 acute medical beds)

HOUSE PHYSICIAN, vacant 20th January, 1954.
(70 surgical beds) Recognised for F.R.C.S.

HOUSE SURGEON, vacant 26th January, 1954. Pre-registration post.
PÆDIATRIC DEPARTMENT (15 Beds)

HOUSE PHYSICIAN, vacant 17th February, 1954.

Queen Alexandra Hospital
(40 acute medical beds)

SENIOR HOUSE PHYSICIAN, vacant 22nd December, 1953.

HOUSE PHYSICIAN, vacant 29th December, 1953. Pre-registration post.
(124 surgical beds) Recognised for F.R.C.S.

HOUSE SURGEONS, vacant now and 26th January, 1954. Pre-registration posts.

Applications, stating age, experience, and qualifications, and names of 2 referees, should be submitted as soon as possible to—

35, Grove-road South, Southsea. E. H. HURST.

PORTSMOUTH. ST. JAMES' HOSPITAL FOR MENTAL AND NERVOUS DISEASE. (1097 Beds.) GROUP 49 HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGION. SENIOR HOUSE OFFICER required. The Hospital is approved as a psychiatric teaching hospital and the post offers excellent experience in the treatment of the neuroses, the psychoneuroses, the maladjusted child and the problems of delinquency. The Neurological Department of the Hospital is also recognised by the examining bodies and arrangements are made to enable Junior Medical staff to fulfil the D.P.M. regulations regarding mental deficiency. Intending candidates may visit the Hospital by appointment.

Applications, giving age, experience, qualifications, and the names and addresses of 2 referees, should be sent to the Physician-Superintendent within 14 days of the appearance of this advertisement.

PLYMOUTH CLINICAL AREA. The Board of Governors OF THE UNITED BRISTOL HOSPITALS AND THE SOUTH-WESTERN REGIONAL HOSPITAL BOARD. Applications are invited by the above Boards from registered medical practitioners for the joint appointment of REGISTRAR in E.N.T. Surgery. Applicants should have had previous experience in E.N.T. Surgery. The appointment will be held for 1 year in the first instance, and be renewable for a further year. The successful candidate will be required to work for the first year at the South Devon and East Cornwall Hospital, Plymouth.

Applications, stating date of birth, qualifications and experience, together with the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 2nd January, 1954.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL. Applications are invited from registered medical practitioners for the appointments of :—

(1) HOUSE SURGEON, Freedom Fields Hospital, vacant 1st January, 1954. Recognised for the Fellowship of the Royal College of Surgeons.

(2) HOUSE PHYSICIAN, Freedom Fields Hospital, vacant 1st January, 1954.

(3) PÆDIATRIC HOUSE PHYSICIAN, Freedom Fields Hospital, vacant 1st January, 1954. Recognised for the D.C.H.

(4) RESIDENT ANÆSTHETIST, Greenbank Road Hospital, vacant immediately. Recognised for the D.A.

(5) HOUSE SURGEON, Greenbank Road Hospital, vacant immediately. Recognised for the Fellowship of the Royal College of Surgeons.

(6) HOUSE OFFICER in Obstetrics, Alexandra Maternity Home, Devonport, vacant 1st March, 1954.

Applications, stating age, nationality, qualifications, and experience, with the names of 3 referees, to be sent to the undersigned as soon as possible.

ARTHUR R. CASH, Group Secretary.
7, Nelson-gardens, Stoke, Plymouth.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL, Greenbank Road. Applications invited from registered dental practitioners for the appointment of RESIDENT DENTAL HOUSE SURGEON, vacant immediately. This appointment is recognised by the Royal College of Surgeons as fulfilling the requirements of candidates for the Fellowship of Dental Surgery.

Applications, stating age, nationality, and experience, together with copies of 3 recent testimonials, should be sent as soon as possible to— ARTHUR R. CASH, Group Secretary.
7, Nelson-gardens, Stoke, Plymouth.

POOLE GENERAL HOSPITAL, Poole, Dorset. Bourne-MOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. 2 HOUSE SURGEONS (pre-registration) required. 1 post vacant now, the other on 14th December, 1953. The Hospital is recognised for the F.R.C.S. and F.R.C.S.E.

Applications to the Hospital Secretary.

ROMFORD, ESSEX. RUSH GREEN HOSPITAL. (301 Beds.) Applications are invited for the post of RESIDENT HOUSE SURGEON (Male or Female), in the Obstetric and Gynæcological Unit comprising 25 gynæcological and 6 maternity beds at the above Hospital. The post, which becomes vacant on 20th January, 1954, also entails certain relief duties on the medical side. It is recognised as a pre-registration post. Applicants may see the Hospital by arrangement with the Medical Superintendent. Telephone Romford 7711.

Applications, stating age, qualifications with dates, and details of experience, together with copies of 2 recent testimonials or names of referees, should be sent to the Medical Superintendent.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (91 Beds.) Applications are invited from registered medical practitioners (Male) for the post of RESIDENT HOUSE SURGEON, vacant now.

Applications, stating age, nationality, qualifications with dates and experience, together with copies of 2 recent testimonials or names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited from registered medical practitioners for the post of ORTHOPÆDIC HOUSE SURGEON (resident) in the Orthopædic and Accident Unit, vacant from 1st February, 1954. The service consists of 100 Beds equally divided between traumatic surgery and "cold" orthopædics. Post is recognised for Pre-registration Service and for F.R.C.S.

Applications, stating age, nationality, qualifications with dates, present appointment and experience, and 2 recent testimonials or names of 2 referees, should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER (anæsthetics) which will become vacant on 4th January, 1954. Excellent opportunities exist at this Hospital, which is recognised for the D.A., for gaining tuition and experience in the administration of anæsthetics. The equipment is the most modern available.

Applications, stating age, nationality, qualifications with dates, present appointment and details of experience with names of 2 referees, should be sent immediately to the Secretary, Hospital Management Committee, Oldchurch Hospital, Romford.

RUGBY. HOSPITAL OF ST. CROSS. House Surgeon for General Surgical Department (48 Beds). Required 14th January, 1954. Post recognised for F.R.C.S. and approved for Pre-registration Service.

Applications and copy testimonials to Hospital Secretary.

RAMSGATE. GENERAL HOSPITAL. (101 Beds.) HOUSE SURGEON. Approved pre-registration post. Salary at the rate of £350–£450 p.a., according to experience, less £100 for residential emoluments.

Applications, with copies of testimonials, to Hospital Secretary.

REDHILL COUNTY HOSPITAL, Earlswood Common, REDHILL, SURREY. REDHILL GROUP HOSPITAL MANAGEMENT COMMITTEE. SURGICAL REGISTRAR, vacant 1st January. Married quarters available. Please state if free for locum tenens pending appointment.

Application forms and appointment to visit from Group Secretary at above address.

READING. ROYAL BERKSHIRE HOSPITAL. (403 Beds.) Applications invited for the appointment of HOUSE SURGEON to E.N.T. Department, vacant 16th December, 1953. Salary within range £350–£450 p.a., less £100 for board-residence, &c.

Apply, stating age, qualifications with dates, nationality, present post, with copy of 1 recent testimonial, to Secretary.

READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (anæsthetics) vacant shortly, for duties at the Royal Berkshire Hospital, Reading.

Apply, with full particulars and copies of recent testimonials, to Group Secretary, 3, Craven-road, Reading.

ROTHERHAM. MOORGATE GENERAL HOSPITAL. (358 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL REGISTRAR required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

RYDE, I.W. ROYAL I.W. COUNTY HOSPITAL. (116 Beds.) ISLE OF WIGHT GROUP HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON. Post approved for Pre-registration Service. National salary scale and conditions. Vacant 9th February, 1954.

Applications, stating age, nationality, qualifications and experience, together with the names of 2 referees, to be sent as soon as possible to Group Secretary, Hospital Management Committee Headquarters, Clatterford House, Carisbrooke, I.W.

SALISBURY GENERAL HOSPITAL. Salisbury Group HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT CASUALTY OFFICER (Senior House Officer) for a period of 12 months from 1st January, 1954.

Applications, naming 2 referees, to Group Secretary, Odstock Hospital, Salisbury.

SALFORD ROYAL HOSPITAL. Salford Hospital MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE OFFICER (Orthopædic and Casualty Departments), resident. Post vacant December. Recognised for F.R.C.S. and gives opportunities for experience in emergency surgery. Salary subject to a deduction of £155 p.a. for board and lodging.

Applications, with copies of 3 testimonials should be sent to the Secretary, Salford Royal Hospital, Salford, 3.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of REGISTRAR in Pædiatrics based at Stobhill Hospital, Glasgow, which will be for 1 year in the first instance. This appointment is subject to the National Health Service (Scotland) superannuation regulations.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, by 8th January, 1954.

SCUNTHORPE AND DISTRICT WAR MEMORIAL HOSPITAL. (269 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT CASUALTY REGISTRAR required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 21st December, 1953, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

SELBY (near). GATEFORTH HOSPITAL. Senior HOUSE OFFICER. Hospital provides 100 Beds for treatment of tuberculosis in male adults and is associated with Killingbeck Hospital and with a Thoracic Surgery Unit.

Applications, with names of 2 referees, to Medical Superintendent, Killingbeck Hospital, York-road, Leeds.

SIDCUP, KENT. QUEEN MARY'S HOSPITAL. Resident SENIOR HOUSE OFFICER (anæsthetics) required to commence duty as soon as possible. Salary £670 p.a., less £150 p.a. for residential emoluments. The post is recognised for the F.F.A. R.C.S. and D.A.

Applications, stating nationality, age, qualifications and experience, together with the names and addresses of 2 referees, should be sent to the Secretary, Sidcup and Swanley Hospital Management Committee.

SHREWSBURY. ROYAL SALOP INFIRMARY/COPTHORNE HOSPITAL. (500 Beds.) SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE PHYSICIAN, approved for Pre-registration Service, and vacant 1st January, 1954.

Applications, stating age, qualifications, nationality and experience, accompanied by copy testimonials, should be sent to J. P. MALLETT, Group Secretary.

Royal Salop Infirmary, Shrewsbury, 16th November, 1953.

SHREWSBURY. ROYAL SALOP INFIRMARY AND COPTHORNE HOSPITAL. (500 Beds.) SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT ANÆSTHETIST (Senior House Officer grade). Post recognised under the conditions of the F.F.A. R.C.S. examination. Vacant immediately.

Applications, stating age, nationality, qualifications and previous experience, together with copies of recent testimonials, should be sent to the Group Secretary, Hospital Management Committee, Royal Salop Infirmary, Shrewsbury.

SHREWSBURY. ROYAL SALOP INFIRMARY. (241 Beds.) SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the appointment of ORTHOPÆDIC/ACCIDENT HOUSE SURGEON (Senior House Officer). The successful applicant will be allowed to attend for 2 days a month at The Robert Jones and Agnes Hunt Orthopædic Hospital, Oswestry, for postgraduate study with the Consultant. The post is recognised under the revised Fellowship regulations in respect of the 6 months training required of candidates for the Final Fellowship examination.

Applications, stating age, qualifications, nationality and experience, accompanied by copy testimonials, should be sent to—

J. P. MALLETT, Group Secretary,
Group 15 Hospital Management Committee.
Royal Salop Infirmary, Shrewsbury.

SHREWSBURY. EYE, EAR AND THROAT HOSPITAL. (70 Beds.) SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners of either sex for the post of SENIOR HOUSE OFFICER (ophthalmic). The Hospital has a self-contained Eye Unit of 35 Beds, and a very busy Outpatient Department. Post recognised for the D.O. and vacant 10th January, 1954.

Applications, stating age, qualifications, nationality, together with copies of recent testimonials, should be sent to—

J. P. MALLETT, Group Secretary.
Royal Salop Infirmary, Shrewsbury, 16th November, 1953.

SHREWSBURY. EYE, EAR AND THROAT HOSPITAL. SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (E.N.T.) vacant immediately. Duties at E.N.T. Hospital (68 Beds) and Copthorne Hospital (168 Beds). Post recognised for the D.L.O. R.C.S.

Applications, stating age, qualifications, nationality, and experience, together with copies of recent testimonials, should be sent to J. P. MALLETT, Group Secretary.

Royal Salop Infirmary, Shrewsbury, 24th September, 1953.

SLOUGH. UPTON HOSPITAL. Anæsthetic Registrar (resident) required at above Hospital. Post recognised for D.A. Approximately 60% of duties performed at Upton Hospital and 40% shared between other hospitals in the Group. Hospital may be visited by direct appointment.

Application form obtainable from and returnable to Group Secretary, Windsor Group Hospital Management Committee, Alma-road, Windsor, by 19th December.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. Applications are invited for the following posts :—

NON-RESIDENT SENIOR REGISTRAR in General Surgery at the Royal Infirmary, Sheffield. Post vacant 20th March, 1954. The appointment is for 1 year in the first instance and will be reviewed annually. It has been agreed in principle between the Board of Governors of The United Sheffield Hospitals and The Sheffield Regional Hospital Board that the appointment if extended to the full period of 4 years will be divided, if circumstances permit, between the Royal Infirmary and a hospital in the Region.

Applications, stating age, qualifications and experience, with the names of 3 referees, should be sent not later than 31st December, 1953, to the Chief Administrative Officer, The United Sheffield Hospitals, West-street, Sheffield, 1.

Children's Hospital, Western Bank, Sheffield, 10

(*a*) HOUSE PHYSICIAN to the Professorial Unit. Post vacant 1st February, 1954.

(*b*) RESIDENT CLINICAL PATHOLOGIST (Senior House Officer grade). Post vacant 23rd January, 1954.

The post is suitable for persons training for pædiatrics or contemplating a career in pathology. The holder is expected to attend clinical rounds and meetings and to assist in the investigation of clinical problems.

Applications for the above posts, stating age, qualifications and experience, together with the names of 2 referees (or enclosing copy testimonials), should be sent to the Superintendent. For post (*a*) the closing date for applications is 19th December, 1953, but for post (*b*) they should be sent at once.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SENIOR REGISTRAR (E.N.T.) required for the Leicester Royal Infirmary. Appointment for 1 year in the first instance, reviewable annually. It has been agreed between the Sheffield Regional Hospital Board and the Board of Governors of the United Sheffield Hospitals that the tenure of the appointment will be divided between the Leicester Royal Infirmary and the Teaching Hospitals.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, to arrive not later than 28th December, 1953.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Whole-time JUNIOR HOSPITAL MEDICAL OFFICERS for the Blood Transfusion Service in the South West and South East Metropolitan Regions. Duties will be divided equally between blood collection from donors in the area covered by the S.W. and S.E. Metropolitan Regional Hospital Boards and laboratory work, including research, at the South London Blood Transfusion Centre, Stanley-road, Sutton, Surrey. The appointments offer ample scope in serology and hæmatology and all aspects of blood transfusion. Blood collection entails about 3 sessions only per week. Salary scale £700–£50–£1000 p.a.

Applications (2 copies), giving date of birth, qualifications, experience, and names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 30th December, 1953. Applicants may visit Blood Transfusion Centre by arrangement with the Medical Director there.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds.) SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post of Whole-time REGISTRAR in Anæsthetics at the above Hospital. Candidates may visit the Hospital if they so desire.

Forms of application, obtainable from the undersigned, should be returned not later than 26th December, 1953.

FRANK JENNINGS, Secretary,
Southampton Group Hospital Management Committee.
Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (278 Beds.) HOUSE SURGEON (resident) required. Post recognised for F.R.C.S. and for Pre-registration Service ; tenable 6 months.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON GENERAL HOSPITAL. (471 Beds —80 surgical.) 2 HOUSE SURGEONS required mid-January and mid-February. Posts tenable for 6 months. Both recognised for F.R.C.S. and the latter for Pre-registration Service.

Applications, with copies of testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON GENERAL HOSPITAL. (Recognised for the Membership and Diploma examinations of the R.C.O.G.) 2 HOUSE SURGEONS (resident) required middle and end of January, for Gynæcological and Obstetric Unit. Posts tenable 6 months, 1 being recognised for Pre-registration Service.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON EYE HOSPITAL. (32 Beds. Recognised for the D.O.M.S.) RESIDENT SENIOR HOUSE OFFICER required in December. Salary £670 p.a.

Applications, with copies of testimonials, should be forwarded as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHPORT GENERAL INFIRMARY. Senior House OFFICER (surgical and casualty) required January, 1954.

Apply immediately, with details of age, nationality, qualifications and experience, enclosing copies of 2 testimonials to—

T. CROOK, Group Secretary.
Southport and District Hospital Management Committee.
Promenade Hospital.

STAFFORD. STAFFORDSHIRE GENERAL INFIRMARY. (175 Beds—Recovery Unit 32 Beds.) STAFFORD HOSPITAL MANAGEMENT COMMITTEE. HOUSE PHYSICIAN (Male or Female), vacant 1st January. Post recognised for Pre-registration Service.

Applications, giving full particulars, together with copies of 3 recent testimonials, to the Group Secretary, 13, Foregate-street, Stafford.

STAFFORD. STAFFORDSHIRE GENERAL INFIRMARY. (175 Beds—Recovery Unit 32 Beds.) STAFFORD HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON (Male or Female), vacant 1st February. Post recognised for Pre-registration Service and for F.R.C.S.

Applications, giving full particulars, together with copies of 3 recent testimonials, to the Group Secretary, 13, Foregate-street, Stafford.

STOKE-ON-TRENT. BUCKNALL ISOLATION HOSPITAL. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications invited for the post of SENIOR HOUSE OFFICER (medical), vacant very shortly.

Applications, with copy testimonials, and full details, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. HOUSE OFFICER (pædiatrics) required. Recognised pre-registration post.

Detailed applications, with copy testimonials, should be forwarded to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent, as soon as possible.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications invited for SENIOR HOUSE OFFICER (orthopædics). Post recognised for F.R.C.S.

Apply, stating age, and nationality, together with details of previous service, to the Group Secretary, Stoke-on-Trent Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (medical—with dermatology). Pre-registration post.

Apply, with copy testimonials, stating age, nationality, and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (medical—with pædiatrics). Pre-registration post.

Apply, with copy testimonials, stating age, nationality, and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. HOUSE OFFICER (orthopædics) required, vacant now. Post recognised for F.R.C.S.

Applications, stating age and nationality, together with details of previous service, to the Group Secretary, Stoke-on-Trent Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications invited for HOUSE OFFICER (general surgery), vacant shortly. Hospital recognised for F.R.C.S. examination and the post is recognised for experience during the pre-registration period.

Apply, with copy testimonials, stating age, nationality, and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

ST. HELENS HOSPITAL. (196 Beds.) Applications are invited for the appointment of RESIDENT HOUSE SURGEON.

Applications, stating age, qualifications and experience, and giving 2 names for reference, should be forwarded immediately to— N. RICHARDS, Secretary,

St. Helens and District Hospital Management Committee.
Group Office, County Hospital, Whiston, near Prescot.

ST. ALBANS CITY HOSPITAL, St. Albans, Herts. Applications are invited for the appointment of a CLINICAL ASSISTANT in Anæsthetics at the above Hospital for 3 sessions per week.

Applications, stating age, qualifications and experience, together with the names of 2 referees, should be addressed to the Group Secretary, Mid Herts Group Hospital Management Committee, Normandy-road, St. Albans, by 24th December, 1953.

ST. ALBANS CITY HOSPITAL, St. Albans, Herts. (382 Beds.) HOUSE SURGEON (House Officer grade) required for 1 of the 2 general surgical teams (recognised for the F.R.C.S.). Post vacant approximately 31st December, 1953, and tenable for 6 months. Preference given to candidates seeking pre-registration posts under the Medical Act, 1950.

Applications, giving age, qualifications, and experience, if any, and the names of 2 referees, to Group Secretary, Mid Herts Group Hospital Management Committee, St. Albans City Hospital, Normandy-road, St. Albans.

ST. ANDREWS. CRAIGTOUN MATERNITY HOSPITAL (41 Beds) AND ASSOCIATED ANTENATAL CLINICS. EAST FIFE HOSPITALS BOARD OF MANAGEMENT. Applications are invited for the appointment of 2 RESIDENT HOUSE OFFICERS at the above Hospital. The posts will become vacant on 1st February and 1st April, 1954, and the tenure of each will be for 6 months. At present only 1 of the posts qualifies for pre-registration, but it is anticipated that by the dates stated both posts will be pre-registration appointments. Salary in accordance with national scale.

Apply, with references, to the Medical Superintendent, East Fife Hospitals Board of Management, 243A, High-street, Kirkcaldy.

SWANSEA HOSPITAL. (403 Beds.) Glantawe Hospital MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the resident post of SENIOR HOUSE OFFICER in the E.N.T. Department of the above Hospital. The Hospital is recognised under the regulations of the F.R.C.S. (E.N.T.) and the D.L.O.

Applications, stating age, qualifications and experience, should be forwarded to O. C. HOWELLS, Group Secretary,
St. Helen's-road, Swansea.

SWANSEA HOSPITAL. (403 Beds.) Glantawe Hospital MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the resident appointment of SENIOR HOUSE OFFICER in the Orthopædic Department of Swansea Hospital. The Hospital is recognised for Part II of the Diploma in Physical Medicine.

Applications, stating age, qualifications and experience, should be addressed to— O. C. HOWELLS, Group Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SWANSEA. MOUNT PLEASANT HOSPITAL. (276 Beds.) GLANTAWE HOSPITAL MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the resident appointment of JUNIOR HOSPITAL MEDICAL OFFICER for work in the Medical and Surgical Departments, and in the Chronic Sick Wards of the above Hospital.

Applications, stating age, experience, and qualifications, should be addressed to—

O. C. HOWELLS, Group Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road Swansea.

SWANSEA. MORRISTON HOSPITAL. (500 Beds.) GLANTAWE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of RESIDENT ANÆSTHETIST (Senior House Officer grade).

Applications, stating age, qualifications, and experience, should be addressed to the Medical Superintendent, Morriston Hospital, Swansea. O. C. HOWELLS, Group Secretary.

SWANSEA. MORRISTON HOSPITAL. (500 Beds.) GLANTAWE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the resident appointment of SENIOR HOUSE OFFICER in the Department of Medicine at the above Hospital.

Applications, stating age, qualifications, and experience, should be addressed to the Medical Superintendent, Morriston Hospital, Swansea. O. C. HOWELLS, Group Secretary.

TAPLOW, near MAIDENHEAD, BERKS. CANADIAN RED CROSS MEMORIAL HOSPITAL. HOUSE PHYSICIAN required for post vacant 4th February. Salary on national scale. Preference given to persons seeking a pre-registration House Officer post.

Applications, stating age, experience and qualifications, with dates, together with copies of 2 testimonials, to Hospital Secretary, by 31st December.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. Applications invited for post of HOUSE PHYSICIAN to the Special Unit for Research in Juvenile Rheumatism, vacant 28th January. Post offers scope for those interested in research, pædiatrics, rheumatology or cardiology. National salary.

Applications, stating age, qualifications and experience with dates, together with copies of 2 testimonials, to Hospital Secretary by 19th December.

WATFORD. SHRODELLS HOSPITAL. (420 Beds.) Applications are invited for the post of HOUSE PHYSICIAN (pre- or post-registration). Post vacant middle of January.

Applications, with copies of 2 testimonials, should reach the Medical Officer-in-Charge as soon as possible.

WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL, WATFORD, HERTS. (198 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE SURGEON, recognised for pre-registration. Post vacant middle of December. Salary according to National Health Service scale.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials should be sent to—

CYRIL HOPKINSON, Administrator.

TORQUAY. TORBAY HOSPITAL. (166 general beds.) RESIDENT HOUSE OFFICER (surgery), Male or Female, required immediately. Post recognised for F.R.C.S. and pre-registration purposes.

Applications, stating qualifications, nationality, and age, with copy testimonials (quoting reference F.955/34), to be sent to the Group Secretary, Torquay District Hospital Management Committee, 62/64, East-street, Newton Abbot, S. Devon.

TUNSTALL. BURSLEM, HAYWOOD AND TUNSTALL WAR MEMORIAL HOSPITAL. (96 Beds.) STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for HOUSE OFFICER (medical).

Apply, with copy testimonials and details of previous appointments held, to the Group Secretary, Stoke-on-Trent Hospital Management Committee, Princes-road, Stoke-on-Trent, as soon as possible.

WAKEFIELD. CLAYTON HOSPITAL. (200 Beds.) HOSPITAL MANAGEMENT COMMITTEE NO. 9 WAKEFIELD A GROUP. Applications are invited for the post of RESIDENT ORTHOPÆDIC OFFICER (Senior House Officer grade) at the above General Hospital. The person appointed will be required to deputise for the Resident Surgical Officer. Terms and conditions of service in accordance with national recommendations and the post is subject to the National Health Service Superannuation Acts and Regulations thereunder.

Applications should be made to the Group Secretary at the above address.

WAKEFIELD. PINDERFIELDS GENERAL HOSPITAL. SENIOR HOUSE OFFICER (Orthopædic Unit). Applications invited for above residential appointment. Salary £670 p.a., deduction of £130 for board and lodging.

Address applications, with full particulars of qualifications, &c., and names and addresses of 2 persons for reference, to—

W. E. EASTWOOD, Deputy Group Secretary.

Victoria Chambers, Wood-street, Wakefield.

WAKEFIELD. THE GENERAL HOSPITAL, Park Lodge-lane, WAKEFIELD. (160 Beds.) HOSPITAL MANAGEMENT COMMITTEE NO. 9 WAKEFIELD A GROUP. Applications are invited for the appointment of a SENIOR HOUSE OFFICER in General Surge.y at the above Hospital. Terms and conditions of service are in accordance with the National Health Service Act and regulations thereunder.

Applications should be made to the Group Secretary, Clayton Hospital, Wakefield.

WARWICK (near). KING EDWARD VII MEMORIAL SANATORIUM, HERTFORD HILL, near WARWICK. (Diseases of the Chest—225 Beds.) SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). Applications are invited for the post of SENIOR HOUSE OFFICER at the above Sanatorium, which is a modern building, to take up duties on 1st January, 1954. All forms of therapy and minor surgery are carried out and the Sanatorium works in close association with a major Thoracic Surgery Unit in a nearby hospital which will be transferred to the Sanatorium in 1954.

Applications, together with the names of 3 referees, should be forwarded to the Medical Superintendent as soon as possible.

WARWICK HOSPITAL. Applications are invited for the resident post of HOUSE OFFICER in Orthopædics. Work includes attendance at clinics.

Applications, with copies of 2 recent testimonials, to the Administrative Officer, Warwick Hospital, Warwick.

WARWICK HOSPITAL. (264 Beds.) South Warwickshire HOSPITAL GROUP (NO. 14). RESIDENT HOUSE SURGEON (general surgery) required, first, second, or third post. Recognised for pre-registration.

Apply to Hospital Secretary, Warwick Hospital, Lakin-road, Warwick.

WARWICKSHIRE. SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). WARWICK HOSPITAL. SENIOR HOUSE OFFICER (anæsthetics). Applications are invited for this appointment for duties mainly at the above Hospital. The post is vacant, recognised for D.A. and application sent for recognition for F.F.A.

Applications, giving the names and addresses of 3 referees should be sent to the Group Secretary, 87, Radford-road, Leamington Spa, as soon as possible.

WARWICK (near). CENTRAL MENTAL HOSPITAL. SENIOR HOUSE OFFICER and JUNIOR HOSPITAL MEDICAL OFFICER required in this Mental Hospital of 1400 Beds with Neurosis Unit, 4 adult and 2 child Psychiatry Clinics recognised for the D.P.M., and Departments of Electroencephalography, Occupational Therapy, Psychology and social work. A modern house is available for each officer.

Applications, together with the names and addresses of 3 referees, to the Medical Superintendent within 14 days of the appearance of this advertisement.

WESTON-SUPER-MARE GENERAL HOSPITAL. (110 Beds.) Applications are invited from registered medical practitioners for the resident appointment of HOUSE PHYSICIAN (first, second, or third post), vacant 1st January, 1954. The appointment is for 6 months in the first instance and may be renewed for a further 6 months.

Applications, stating age, qualifications, and experience, together with names and addresses of 2 referees, should be addressed to the Secretary, Weston-super-Mare Hospital Management Committee.

WESTON-SUPER-MARE GENERAL HOSPITAL. (110 Beds.) Applications are invited from registered medical practitioners for the resident appointment, vacant 1st March, 1954, of HOUSE SURGEON (first, second, or third post). The appointment will be for a period of 6 months in the first instance and may be renewed for a further 6 months.

Applications, stating age, qualifications and experience, together with names and addresses of 2 referees, should be addressed to the Secretary, Weston-super-Mare Hospital Management Committee.

WARRINGTON INFIRMARY. (172 Beds.) Applications are invited for a vacancy at the above Hospital for a RESIDENT HOUSE SURGEON (Male or Female). Salary will be £350–£450 p.a., less a deduction of £100 for full residential emoluments.

Applications should be sent to—

H. L. BOOT, Group Secretary,
Warrington and District Hospital Management Committee.
c/o General Hospital, Warrington, Lancs.

WELSH REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of SENIOR REGISTRAR in General Medicine to serve the Glantawe Hospital Management Committee. The successful candidate will be based at Morriston Hospital, Morriston, near Swansea, and may also be expected to serve other hospitals within the Group. The appointment will be for a period of 2 years in the first instance, but subject to review at the end of the first year.

Forms of application should be obtained from Senior Administrative Medical Officer, Welsh Regional Hospital Board, Cathays Park, Cardiff, within 14 days of appearance of this advertisement.

WHITEHAVEN HOSPITAL, Cumberland. (109 Beds and Annexe of 19 Beds.) HOUSE SURGEON for Orthopædic and Casualty Departments (House Officer or Senior House Officer grade), vacant now.

Detailed applications, with dates and copies of 2 testimonials, to Secretary.

WINDSOR. KING EDWARD VII HOSPITAL. House PHYSICIAN (pædiatrics) required immediately (Male or Female). Hospital recognised for D.C.H. Successful candidate will be resident at Old Windsor Unit. Preference given to persons seeking a pre-registration House Officer post. Candidates must be members of a Medical Protection Society. National salary.

Applications, stating age, nationality, qualifications with dates, and experience, with copies of 3 testimonials or names of 3 referees, to Hospital Secretary by 19th December.

WOODFORD BRIDGE, WOODFORD GREEN, ESSEX. CLAYBURY HOSPITAL (for nervous and mental disorders). Applications are invited for the post of SENIOR HOUSE OFFICER. The appointment is full-time, resident or non-resident, at a salary of £670 p.a. Board-residence for an unmarried applicant, for which a charge of £150 p.a. will be made, is available. The Hospital has over 2000 Beds and an admission-rate of about 900 a year. All forms of treatment are undertaken and out-patients clinics at general hospitals are run by the Hospital staff. Facilities will be offered for attendance at lectures in London (1 hours journey) for the D.P.M. Previous general but not psychiatric experience necessary.

Applications, with full particulars and the names and addresses of not less than 2 referees, to be sent to the Physician-Superintendent of the Hospital not later than 14 days after the appearance of this advertisement.

WORTHING HOSPITAL, Lyndhurst-road, Worthing, SUSSEX. WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT SURGICAL OFFICER (Registrar grade) at the above Hospital, vacant 1st February, 1954. The post is recognised under the revised Fellowship regulations for the F.R.C.S. examination, but preference will be given to candidates holding the F.R.C.S. qualification.

Forms of application are available from the undersigned.

A. V. OAKTON, Group Secretary.

WORKINGTON INFIRMARY, Cumberland. (108 Beds, plus Annexe 34 Beds. Pre-registration post.) HOUSE PHYSICIAN (first, second, or Senior House Officer post), vacant January.

Detailed application, with dates and copies of 2 testimonials, to Secretary.

WORCESTER ROYAL INFIRMARY. Applications are invited for the post of SENIOR HOUSE OFFICER in Medicine (resident) which will be vacant mid-January. The post is of 1 years duration and is the senior of the resident medical posts.

Applications, with copies of 3 recent testimonials, to be sent to the Secretary.

YORK A AND TADCASTER HOSPITAL MANAGEMENT COMMITTEE.

Naburn and Bootham Park Hospital (614 Beds)

JUNIOR HOSPITAL MEDICAL OFFICER in Psychiatry. Hospital recognised for D.P.M. and facilities exist for attendances at Courses at Leeds University for the D.P.M. Previous experience in psychiatry is preferable though not essential as clinical instruction is available. Health Service, amenity and private patients are admitted—present admission-rate over 400 p.a. Emphasis is laid on active and intensive treatment; discharge-rate and turnover are high. The successful applicant must live in or near Bootham Park which is near the centre of York. Accommodation available for single person—charge £158 p.a. Advice available regarding suitable accommodation near Hospital. Salary scale £700–£50–£1000 p.a. Starting-point dependent upon previous experience in Junior Hospital Medical Officer or Registrar grades.

Applications with names of 2 referees to Medical Superintendent, Bootham Park, by 31st December.

Grange Hospital (Geriatric Hospital of 259 Beds with Consultant staff)

JUNIOR HOSPITAL MEDICAL OFFICER (resident or non-resident) in Geriatrics as soon as possible. Salary £700–£50–£1000, less £153 if resident. Residence available at Doctors' Hostel of modern General Hospital in same grounds.

County Hospital

SENIOR HOUSE OFFICER (resident or non-resident) in Ophthalmology. Post recognised for D.O. and vacant from 13th December. Salary £670, less £153 if resident.

Applications, giving experience, qualifications, nationality, and the names of 2 referees, to the Secretary, York A and Tadcaster Hospital Management Committee, Bootham Park, York.

WINDYGATES, FIFESHIRE. CAMERON I.D. HOSPITAL. RESIDENT HOUSE PHYSICIAN required for 6 months. The post is recognised for Pre-registration Service. The Hospital consists of 100 infectious diseases beds including 12 for treatment of tuberculous meningitis, and 30 chronic sick beds. Salary in accordance with national scale.

Apply, with copies of 2 recent testimonials, to the Medical Superintendent, East Fife Hospitals Board of Management, 243A, High-street, Kirkcaldy.

WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE GROUP NO. 16 BIRMINGHAM REGION.

The Royal Hospital, Wolverhampton (an Associated Hospital of the University of Birmingham Medical School)

HOUSE OFFICER (Ear, Throat and Nose Department), vacant now.

HOUSE OFFICERS (2) (general surgery), vacant 20th December, and 31st December.

New Cross Hospital, Wolverhampton

HOUSE OFFICER (general surgery), vacant 20th January.

Wolverhampton and Midland Counties Eye Infirmary (Recognised for F.R.C.S. and D.O. examinations.)

HOUSE OFFICER, vacant 1st January.

Applications, with copies of 3 recent testimonials, to be sent to W. COCKBURN, Group Secretary, The Royal Hospital, Wolverhampton.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for the whole-time post as SENIOR HOUSE OFFICER or REGISTRAR in Neurosurgery at hospitals managed by the Belfast Hospital Management Committee. The appointment may be made as Senior House Officer or Senior or Principal Registrar, the analogous grades in Great Britain being Senior House Officer, Registrar and Senior Registrar respectively. In the first instance the appointment will be for the period ending 30th September, 1954.

Applications should be made on a form, which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, Victory Buildings, 44–46, Queen-street, Belfast, and which must be returned so as to be received not later than 9th January, 1954.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for a whole-time post as MEDICAL OFFICER at Mourne Hospital, Kilkeel, Co. Down. In the first instance the appointment will be for the period ending 30th September, 1954, and the salary will be on the scale of £700–£50–£1000 p.a.

Applications should be made on a form which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, Victory Buildings, 44–46, Queen-street, Belfast, and which must be returned so as to be received not later than 4th January, 1954.

NEW YORK. ALBANY HOSPITAL, Albany, New York, U.S.A. INTERNSHIPS and RESIDENCIES available in 700-Bed general, private Albany Hospital, directly connected with Albany Medical College. Approved for all major specialties. Participating in Exchange-Visitor Program. Salary range $1320–$2220 annually in addition to laundry, uniforms and room. All appointments begin 1st July, 1954.

For further information apply to Medical Director.

Public Appointments

HER MAJESTY'S COLONIAL SERVICE. Nigeria. Applications are invited from Doctors with medical qualifications registrable in the United Kingdom and with at least 1 years experience after qualification for the following posts in the Medical Department of the Government of Nigeria :—

(*a*) MEDICAL OFFICERS, for general duties in preventive and curative medicine which may include purely rural health work, involving much travelling.

(*b*) MEDICAL OFFICERS OF HEALTH. Duties as under (*a*). In addition the selected Officers would undertake the control of sanitary matters, and may be required to perform the duties of Port Health Officer at a sea or air port. Candidates should possess a Diploma in Public Health. A Diploma in Tropical Hygiene, though not essential, is desirable.

Appointments may be made as follows :—

(*a*) on 3 years probation for permanent and pensionable employment in the Colonial Medical Service, with retiring age of between 45 and 55. Pensions are at the rate of 1/600th of final pensionable emoluments for each completed month of reckonable service ;

(*b*) from the National Health Service. Candidates may resign from the National Health Service but retain their superannuation rights during their time in Nigeria (up to 6 years) and receive a resettlement grant of 20% of the aggregate of their Colonial salary on leaving Nigeria at the end of their engagement ; or

(*c*) on short-term contract (2–4 tours of 18 months duration) with inclusive salary of from £1087 p.a. rising to £2000 p.a. ; on completion of contract a gratuity is paid at the rate of £37 10s. for each completed period of 3 months service (including leave).

Officers appointed under (*a*) or (*c*) are required to contribute to a Widows' and Orphans' Pension Scheme. Salaries, including pensionable expatriation pay for Officers appointed under (*a*) or (*b*) range from £950 to £1850 p.a. Starting salary in all cases depends on experience and war service. Quarters are provided at low rents. Free passages in both directions are provided for Officer and his wife. Payment of the cost actually incurred on 1 outward and 1 homeward passage for each of 2 children under age of 18, subject to maximum of £75 in respect of the return journey for each child, is also granted. Income-tax at local rates. Local leave is permissible and generous home leave is granted after each tour of 18 months duration.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/14/01).

HER MAJESTY'S COLONIAL SERVICE. Kenya. Vacancies exist for MEDICAL OFFICERS for general duties in the Medical Department of Kenya. Successful candidates may be posted to any station in Kenya. During the earlier years of service an officer will be expected to carry out general medical and surgical duties including a varying amount of public health administration. In most stations, even if remote from the larger towns, it is possible for an officer to maintain interest in any particular branch of medicine or surgery to which he is attracted. As far as possible the interests of an officer are considered when postings are made. The work of every Medical Officer is based on a hospital which may vary in size and facilities from a small district hospital meeting the needs of a comparatively primitive community to a large and modern provincial hospital. It is intended to select 1 officer with an interest in Psychiatry. He need not possess a Diploma in Psychiatric Medicine, or have special experience, but should be interested in psychiatry and keen to gain experience in this field of medicine. Appointments can be made on a permanent basis with pension (non-contributory) at the age of 55, or on short-term contract with gratuity on satisfactory completion of service. Salary is paid in the scale £865–£935–£35–£1005–£45–£1140–£45–£1320–£45–£1590 p.a., starting-point is determined by experience and war service, and 4 extra increments are given to successful candidates possessing the F.R.C.S., D.P.M., D.P.H., or other approved higher qualifications. Temporary cost-of-living allowance of £300 rising to a maximum of £350 p.a., is also payable. Quarters provided at rental of 10% of salary. Free passages in both directions for Officer and wife and up to cost of 1 adult fare for children. Taxation at local rates. Annual local leave permissible and generous home leave granted after each tour of from 40 to 48 months. Educational facilties are available. Medical Officers are eligible for promotion to administrative super-scale posts in Kenya and other colonial territories and also, if they have higher qualifications and suitable experience, for specialist appointments. Candidates must possess medical qualification registrable in the United Kingdom and at least 1 years postgraduate hospital experience.

Application forms from Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/7/02).

HER MAJESTY'S COLONIAL SERVICE. Barbados. An ANÆSTHETIST is required at the General Hospital, Barbados. The selected officer will be responsible for the anæsthetic services at the General Hospital, under the direction of the Director of Medical Services and will be required to assist in training of nurses and medical interns. His duties will include pre- and postoperative care of patients in so far as these duties relate to anæsthetics and to keep records. Candidates must possess qualifications registrable in the United Kingdom and should have had experience in the use of anæsthetics. To qualify for specialist salary scale (see below) candidate must hold a Diploma in Anæsthetics. Appointment can be made on permanent basis with pension (non-contributory) at the age of 55, or on agreement for 3 years in the first instance (in which event passage arrangements quoted below are slightly different). For officers on agreement arrangements will, if possible, be made to continue their superannuation payments. Salary scale for candidates not possessing specialist qualifications is $4128–$5280 (£860–£1100) a year. For candidates holding specialist qualifications, salary scale is $4800–$6240 (£1000–£1300) a year plus a non-pensionable allowance equal to one half of fees paid into Public Treasury in respect of special services rendered. A cost-of-living allowance of £32 10s. a year is payable on both salary scales. Furnished quarters are available at rental of 5% of salary (for officers on agreement, free furnished quarters or allowance of 10% of salary). Free passages on appointment are provided for Officer and family up to maximum cost of £300, (or £400 if Governor requires candidate to travel by air). Free passages on leave are provided for Officer and wife only at end of tour of service of 3½ years (pro rata payment on completion of not less than 2 years of tour). Home leave may be granted on full pay after each tour. Income-tax at local rates. Social and recreational amenities are good. Climate is healthy for Europeans. Educational facilities are available.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/28/05).

HER MAJESTY'S COLONIAL SERVICE. British GUIANA. SURGEON required. Duties : to act as Resident Surgeon at the Public Hospital, New Amsterdam, Berbice and to perform such surgical and other duties in the Public Hospitals as the Director of Medical Services may direct ; to instruct junior medical officers and nurses in surgery and obstetrics. Appointment will be on 3 years probation for permanent and pensionable employment or on agreement for 2–3 years. Candidates in the National Health Service may resign from the National Health Service but retain their superannuation rights while serving abroad (up to 6 years) and thereafter receive a resettlement grant of 20% of the aggregate of their Colonial salary. Salary scale £1000–£50–£1200 p.a. plus Specialist allowance of £200 p.a. Private practice is not allowed but a non-pensionable allowance of £200 p.a. is payable in lieu of consultation fees. A temporary cost-of-living allowance of £50 p.a. is also payable. Free unfurnished quarters provided. Taxation at local rates. Free passages on appointment for Officer and family not exceeding 5 persons in all, and up to £200 for Officer only on leave. Local leave permissible and generous home leave granted after each tour of from 2 years. Candidates must hold degrees or diplomas in medicine and surgery registrable in United Kingdom and be Fellows of 1 of the Royal Colleges of Surgeons : a higher qualification in gynæcology and obstetrics is desirable. They should have held resident surgical appointments in a general hospital for at least 2 years.

Application forms from Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/30/02).

HER MAJESTY'S COLONIAL SERVICE. British HONDURAS. A MEDICAL OFFICER is required for general duties. Appointment can be made on a permanent basis with pension (non-contributory) at the age of 55, or on short-term agreement renewable if desired. Arrangements can probably be made for a doctor in the National Health Service to resign from the National Health Service but retain his superannuation rights during his time in British Honduras (up to 6 years) and receive a resettlement grant of 20% of the aggregate of his British Honduras salary on leaving the Colony at the end of his engagement. Salary scale ranges from £810 to £1200 p.a. at the current rate of exchange of the British Honduras dollar ($4 = £1). Private practice in district towns is permitted. (In Belize there is an allowance of £125 p.a. in lieu of private practice.) Quarters are available at a rental of 7½% of salary, subject to a maximum charge of £120 p.a. Income-tax at local rates. Free passages are provided on appointment for Officer, wife and children, not exceeding 5 persons in all. On leave, passages are provided for Officer and wife, and not more than 2 children, subject to the provision of funds annually by the Legislative Council. Local leave is permissible and generous home leave is granted after each tour of from 2 to 3 years duration. Candidates must possess medical qualifications registrable in the United Kingdom.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/31/01).

HER MAJESTY'S COLONIAL RESEARCH SERVICE. EAST AFRICAN MEDICAL SURVEY. Vacancy exists for a MEDICAL RESEARCH OFFICER whose duties will include the carrying out of physical examinations of Africans as part of a large scale medical survey of isolated populations. African assistants will be available. Candidates, who should be Male and not over 40 years of age, must possess medical qualifications registrable in the United Kingdom. Tropical experience would be of advantage but is not essential. Salary scale ranges from £565 p.a. to £1270 p.a. In addition an overseas research allowance is payable as follows: £275 p.a. for officers whose salaries are below £650 p.a. and £250 when salaries are £650–£1270 p.a. Starting-point on the salary scale is determined according to qualifications and experience. A cost-of-living allowance is also paid at the rate of 35% of salary and overseas research allowance subject to a maximum of £350 p.a. Quarters are available at a rental of 10% of basic salary. Free passages are provided for Officer, wife, and for children under 13 years. Outfit allowance of £60. Superannuation is provided under the Colonial Superannuation Scheme. Selected candidate may be required to fly to East Africa. The Officer will be required to serve for periods away from the Unit's headquarters in isolated stations with other members of the Research team.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/189/03).

BRADFORD. CITY OF BRADFORD. Health Department. Applications are invited from registered medical practitioners for the appointment of ASSISTANT MEDICAL OFFICER. The duties will mainly be clinical work in the School Health and Maternity and Child Welfare Services; but the person appointed will also be required to undertake such other duties from time to time as may be decided by the Medical Officer of Health. The salary is in the scale £950–£50–£1300 according to experience. The post is superannuable.

Forms of application may be obtained from Medical Officer of Health, Town Hall, Bradford, and should be returned to the undersigned within 14 days of the appearance of this advertisement.

Town Hall, Bradford, 1. W. H. LEATHEM, Town Clerk.

NORTHAMPTONSHIRE. BOROUGH OF KETTERING. DISTRICT MEDICAL OFFICER OF HEALTH AND ASSISTANT COUNTY MEDICAL OFFICER. Applications are invited from registered medical practitioners holding a D.P.H. or similar qualification for the mixed appointment of Medical Officer of Health for the Borough of Kettering and Assistant County Medical Officer for the same area. The Officer will act under the County Medical Officer of Health as Assistant County Medical Officer. The salary scales for the appointment will be in accordance with the awards of the Industrial Court—namely: (i) Borough Medical Officer of Health—£1057 p.a. by 4 annual increments of £34 to £1193 p.a., and (ii) Assistant County Medical Officer—£378 p.a. by 7 annual increments of £20 to £518 p.a. Office accommodation and clerical assistance will be provided. The appointment is subject to: (*a*) the Local Government Act, 1933, and the Sanitary Officers (Outside London) Regulations, 1935 and 1951; (*b*) the Local Government Superannuation Acts; and (*c*) the passing of a medical examination. The Officer will be required to devote his whole time to the duties of the appointment, to reside within the area for which he acts and to discharge the obligations imposed on a District Medical Officer of Health by the relevant Acts, Orders and Regulations. As regards the duties as Borough Medical Officer of Health, the Officer will be subject to the sole control and direction of the Borough Council and these duties include those of a medical referee for the purposes of the Crematorium. The appointment will be determinable upon 3 months notice on either side.

Applications, stating age, qualifications and experience, with the names of 3 referees, should reach the Clerk of the County Council by 31st December, 1953. Canvassing will disqualify.

J. ALAN TURNER, Clerk of the County Council.
D. DUNSFORD PRICE, Town Clerk.

County Hall, Northampton.

LANCASHIRE COUNTY COUNCIL. Deputy County MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER. Applicants must be registered medical practitioners possessing the Diploma in Public Health or its equivalent. Salary £2000–£250–£2500.

Full particulars and forms of application from County Medical Officer of Health, East Cliff County Offices, Preston. Applications to be returned by 31st December, 1953.

General Practice

For an Executive Council post (England and Wales) apply on form E.C.16A obtainable from the council. Mark envelope "Vacancy."

CARCROFT, near DONCASTER. Applications are invited for VACANCY (urban and rural). List at present 3180. Apply on Form E.C.16A to the undersigned, from whom further particulars may be obtained, not later than 31st December, 1953.

C. H. STABLER, Clerk,
Yorkshire West Riding Executive Council.
5, St. John's-north, Wakefield.

LIVERPOOL. CROXTETH No. 2 (GILL MOSS) ESTATE. Applications are invited for a Medical Practice on a Corporation Housing Estate, developing. There is no list of patients. Corporation (3 bedroomed) house, with surgery, waiting-room, and garage added, will be made available on rental. Apply on Form E.C.16A to the undersigned, not later than Monday, 28th December, 1953.

J. G. DONCASTER, Clerk, Liverpool Executive Council.
36, Princes-road, Liverpool, 8.

Miscellaneous

To non-professional posts the Notification of Vacancies Order 1952 applies

Assam. A British Medical Officer is required for a group of Tea Estates; age 28–36 years; tropical clinical and hygiene experience an advantage. Basic salary £1350 p.a. for 3-year agreement which is renewable. Dearness allowance £315 p.a. plus marriage and family allowances; car allowance additional; Provident fund. Bungalow, essential furniture and servants provided.—Applications with copies of 3 testimonials and the names of 3 other persons for reference purposes, to: Address, No. 880, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Messrs. H. W. Carter & Co. Ltd., The Royal Forest Factory, Coleford, Glos. (makers of "Ribena"), intend shortly to appoint a Medical Superintendent on their Senior Executive Staff, who will be responsible to the Technical Director, for general development work on ethical vitamin C products with a fruit-juice base. The Superintendent will be expected to advise the firm on all aspects of a medical and nutritional nature in their publicity; to keep in touch with medical literature affecting the firm's products and to interpret its importance; to design and initiate controlled clinical tests in this country and in other specified areas abroad. Applications are requested from doctors, preferably with a high medical qualification and with an interest in nutrition. The Superintendent would be required to live in the Forest of Dean, but a considerable amount of travel both home and abroad, would be expected to ensue. Commencing salary according to qualifications, but with a minimum of £1500 p.a.—Applications should be sent as soon as possible to the Technical Director at the above address.

A full-time Medical Officer is required by The Steel Company of Wales Limited (Steel Division), for their Port Talbot, Margam and Abbey Works employing over 10,000 men. Applications are invited from those interested in industrial medicine as a career.—Those wishing to apply for this vacancy should write for official application form to the Personnel Superintendent, THE STEEL COMPANY OF WALES LIMITED, P.O. Box No. 3, Port Talbot, Glam., to be received not later than 19th December, 1953.

Part-time Secretary/Shorthand-typist wanted by Medical Specialist, Wimbledon area. Essential: good general education, judgment, accuracy, reasonable shorthand and typing speeds. High speeds, knowledge medical terms, inessential though welcome. 2–3 evenings and 1–2 afternoons a week; pay to be discussed.—Address, No. 879, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

State-registered Nurse with secretarial qualifications seeks Receptionist-Secretary's post with London Doctor.—Address, No. 878, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

100% Mortgage to doctor. Spacious modern 4-bedroom residence. Brick garage. Hall 20 ft. × 20 ft. Suitable waiting-room. £4900 freehold.—HAM 7585.

Applicants for posts requiring testimonials copied or duplicated should communicate with MANTON SECRETARIAL SERVICE, LTD., 98, Victoria-street, S.W.1 (Phone: VICtoria 0141), who are specialists in this kind of work.

The Proprietor of British Patent No. 632,847 for "Improve-ments in Massage Apparatus," desires to enter into negotiations with a firm or firms for the sale of the patent, or for the grant of licences thereunder.—Further particulars may be obtained from: MARKS & CLERK, 57/58, Lincoln's Inn-fields, London, W.C.2.

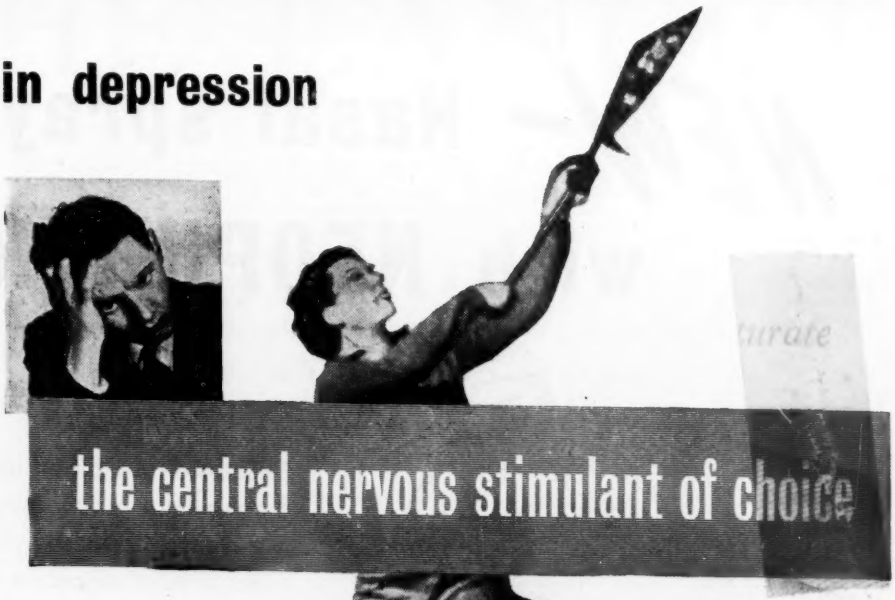
1950 series Daimler 2½-litre saloon. In first-class con-dition, carefully maintained. One owner, sacrifice.—Address, No. 877, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Genuine 17th-Century Maps of every British County by Speed, Saxton, &c. Framed or unframed.—FOLEY WHICKHAM, Antiques, 4, Royal Hotel Shops, Scarborough.

Microscopes. Highest prices paid for good modern types. Send or bring your equipment for valuation.—WALLACE HEATON LTD., 127, New Bond-street, W.1.

PUBLISHED by the PROPRIETORS, THE LANCET LIMITED, 7, Adam Street, Adelphi, in the County of London.
Printed by HAZELL, WATSON & VINEY, LTD., London and Aylesbury—Saturday, December 12, 1953.
PRINTED IN GREAT BRITAIN—Entered as Second Class at the New York, U.S.A., Office.

in depression



the central nervous stimulant of choice

'Dexedrine' is now established as an invaluable aid in overcoming the depressive states that so often accompany convalescence, the climacteric, chronic organic disease, and old age. 'Dexedrine' can be relied on to dispel the characteristic chronic fatigue, restore mental alertness, and induce a feeling of energy and well-being — without causing undesirable peripheral side-effects.

'Dexedrine' tablets

Each tablet contains
5 mg. dextro-amphetamine sulphate

MENLEY & JAMES, LIMITED, COLDHARBOUR LANE, LONDON, S.E.5

for Smith Kline & French International Co. owner of the trade mark 'Dexedrine'

DP112

NEW- Nasal spray with NEOPHRYN

This powerful but non-irritant decongestant is now available as a spray to provide symptomatic relief whenever nasal congestion occurs. The new spray can easily be carried in the pocket or handbag, and has been precision engineered with a micro-jet tip to give an adequate dose of 'Neophryn' in a fine even spray.

Basic N.H.S. cost—2/4d.

NEOPHRYN

Trade Mark

Manufactured in England by

BAYER **PRODUCTS LTD., Africa House, Kingsway, London, W.C.2**

Associated export company: WINTHROP PRODUCTS LIMITED, LONDON